Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	
	Group #	1	
	K/A #	00007EK1.06	
	Importance Rating	4.1	

Proposed Question:
Given the following conditions:
Indian Point 3 was operating at 100% power for 90 consecutive days at EOL when a Reactor Trip occurs coincident with a Loss of Offsite Power. The crew has stabilized the plant in accordance with station EOPs, and have entered POP 3.1- "Plant Shutdown From 45% Power". Total AFW flow to the Steam Generators has lowered from 300 gpm to 200 gpm over the last hour to properly maintain NR levels.

WHICH ONE of the following describes the reason for the reduction in AFW flow?

A. S/G blow down was manually secured.
B. 32 ABFP was secured.
C. Decay Heat Is Lowering.
D. CST level is being conserved.

Proposed Answer:
C. Decay Heat Is Lowering.

Explanation (Optional):
A. S/G blow down was isolated on the Loss of Offsite Power
B. 32 ABFP would remain idling to be available for heat removal.
C. AFW Flow is removing decay heat and reactor coolant pump heat, decay heat is lowering post trip, therefore AFW demand is lower
D. AFW will be used as necessary to remove decay heat

Technical Reference(s): ES-0.1"Reactor Trip Response" Basis

Proposed references to be provided to applicants during examination: None

Learning Objective: LIC-EOP-02 (5347) (As available)

Question Source: Bank # INPO- 1281
Modified Bank # ________ (Note changes or attach parent)
New ________

Question History: Last NRC Exam North Anna 1 1/96

Question Cognitive Level: Memory or Fundamental Knowledge X
Comprehension or Analysis ______

10 CFR Part 55 Content: 55.41 X
55.43 ______

Comments:

EK1 Knowledge of the operational implications of the following concepts as they apply to the reactor trip:
(CFR 41.8 / 41.10 / 45.3)
EK1.06 Relationship of emergency feedwater flow to S/G and decay heat removal following reactor trip

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	
	Group #	1	
	K/A #	0008AK2.02	
	Importance Rating	2.7	

Proposed Question:
Given the following conditions:

- The plant was operating at 100% power.
- A pressurizer vapor space rupture has occurred and has caused a Reactor Trip and Safety Injection.
- The crew has transitioned to E-1, "Loss of Reactor or Secondary Coolant."
- ADVERSE CONTAINMENT conditions exist.

WHICH ONE of the following parameters checked in E-1 does NOT have alternate values specified for use during ADVERSE CONTAINMENT conditions?

A. Containment Pressure
B. Pressurizer Level
C. RCS Subcooling
D. S/G Narrow Range Level

Proposed Answer:
A. Containment Pressure

Explanation (Optional):
In E-1, Pressurizer Level, RCS Subcooling, and S/G Narrow Range Level all have adverse containment values. Containment Pressure does not.

Technical Reference(s): E-1 "Loss of Reactor or Secondary Coolant

Proposed references to be provided to applicants during examination: None

Learning Objective: LIC-EOP-31 Obj15 (As available)

Question Source: Bank # INPO-10740
Modified Bank # ____ (Note changes or attach parent)
New ____

Question History: Last NRC Exam IP3 7/96

Question Cognitive Level: Memory or Fundamental Knowledge X
Comprehension or Analysis ____

10 CFR Part 55 Content: 55.41 X
55.43 ____

Comments:
AK2- Knowledge of the interrelations between Pzr Vapor Space Accident (CFR 41.7,45.7)
K2.02 Sensors and Detectors

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	
	Group #	1	
	K/A #	00008K3.04	
	Importance Rating	4.6	

Proposed Question:
Indian Point 3 has experienced a Reactor Trip and a Safety Injection. The following parameters are observed:

- All Control Rods Have Inserted.
- RCS Pressure is 1100 psig and is slowly lowering.
- Pressurizer Level is 100%.
- RCS Subcooling is 30 degrees F as read on qualified CETs.
- Containment Pressure is 3 psig and is slowly rising.
- Containment Particulate and Gaseous Radiation levels are rising slowly.
- 2 SI Pumps are running
- All 4 Reactor Coolant Pumps are running.

What is the required Reactor Coolant Pump configuration for this condition?

A. Run all 4 RCPs To Allow Proper Mixing of Borated Safety Injection Water.
B. Trip 3 of 4 RCPs and leave 34 RCP running for pressurizer spray flow.
C. Trip all 4 RCPs as required due to low RCS Subcooling.
D. Trip all 4 RCPs since a Phase B actuation should have occurred.

Proposed Answer: C. Trip all 4 RCPs as required due to low RCS Subcooling.

Explanation (Optional):
A. Running all 4 RCPs is not allowed per E-0
B. Must trip all 4 RCPs per E-0
C. Answer is correct, SI is running and Subcooling is < 40F per E-0
D. Phase B has not occurred
Note: Tests the implied reason for tripping RCPs.

Technical Reference(s): E-0 Step 13 (Attach if not previously provided)
Proposed references to be provided to applicants during examination: None

Learning Objective: LIC-EOP-32 (5368), LIC-EOP-42(5800)

Question Source: Bank # ____
Modified Bank # ____ (Note changes or attach parent)
New X

Question History: Last NRC Exam N/A

Question Cognitive Level: Memory or Fundamental Knowledge ____
Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 X
55.43 ____

Comments:
AK3- Knowledge of reasons for the following as they apply to Pzr Vapor Space Accidents (CFR 41.5,41.1,45.6,45.13)
K3.04 RCP Tripping Requirements

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	____	1
	Group #	____	1
	K/A #	00009EA2.01	
	Importance Rating	____	4.8

Proposed Question:
Safety Injection flow has been reduced during a Small Break LOCA using ES-1.2 "Post LOCA Cooldown and Depressurization". Subsequently the Reactor Operator notes the following:

- RCS subcooling is 10 degrees F as indicated on qualified Core Exit Thermocouples
- SG levels indicate 28% NR on all S/Gs
- Total AFW flow is 600 gpm
- RCS pressure is 1450 psig and slowly decreasing
- Pressurizer level is 10% and stable
- All Charging Pumps are running and maximum charging flow is established
- ONE SI pump has been stopped

What is the NEXT action required based on the above data?

A. Transition to E-1, "Loss of Reactor Or Secondary Coolant", to verify Recirc capability.
B. Manually start SI pumps and continue the cooldown.
C. Depressurize the RCS to refill the PZR.
D. Continue the cooldown in ES-1.2. No contingency actions are required.

Proposed Answer:
B. Manually start SI pumps and continue the cooldown.

Explanation (Optional):
A. Not an appropriate transition- Situation requires SI pump restart- Transitions recommended by TSC
B. Action called out by step 18 in ES 1.2 "Post LOCA Cooldown and Depressurization"
C. Not is accordance with ES-1.2 "Post LOCA Cooldown and Depressurization"
D. Actions are required.

Technical Reference(s): ES 1.2 "Post LOCA Cooldown and Depressurization"

Proposed references to be provided to applicants during examination: None
Learning Objective: LIC-EOP-33 Obj V

Question Source: Bank # INPO 084 Braidwood 6/99
Modified Bank # ____ (Note changes or attach parent)
New ____

Question History: Last NRC Exam 6/99
Question Cognitive Level: Memory or Fundamental Knowledge ____
Comprehension or Analysis X
10 CFR Part 55 Content: 55.41 ____
55.43 X

Comments:
EA2 Ability to determine or interpret the following as they apply to a small break LOCA:
(CFR 43.5 / 45.13)
EA2.01 Actions to be taken, based on RCS temperature and pressure, saturated and superheated

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	
	Group #	1	
	K/A #	000011EA1.07	
	Importance Rating	4.4	

Proposed Question:
Indian Point 3 was operating at 100% when a Design Basis Large Break Loss of Coolant Accident occurred thirty minutes ago. The following parameters currently exist:

- All Control Rods are inserted
- RCS Pressure is 40 psig
- Pressurizer Level is 0%
- Full Range RVLIS indicates that the core is covered to the Midplane
- Safety Injection equipment has functioned normally
- RCS Subcooling is 0F
- Containment Radiation levels are in alarm and slowly rising
- Containment Pressure is 17 psig and slowly lowering.

Which of the following is correct concerning Containment Isolation?

A. Phase A has actuated on High Containment Pressure Signal, and Phase B has actuated on High-High Containment Pressure Signal.
B. Phase A has actuated on the Safety Injection Signal and Phase B has actuated on High-High Containment Pressure Signal.
C. Phase A has not actuated and Phase B has not actuated since RCPs are required for this condition.
D. Phase A has actuated on the Safety Injection Signal and Phase B has not actuated.

Proposed Answer:
B. Phase A has actuated on the Safety Injection Signal and Phase B has actuated on High-High Containment Pressure Signal.

Explanation (Optional):
A. Phase A does not actuate on a reactor trip signal
B. Phase A would have actuated on SI signal, Phase B actuates on containment pressure
C. Both Phase A and B have actuated and RCPs need to be secured per E-0
D. Phase A Statement is correct, however Phase B should have actuated. Large Break LOCA of indicated magnitude causes containment pressures much higher than the trip set point of 22 psig. Containment pressure of 17 psig is meant to show that containment cooling and containment spray are having an effect.

Technical Reference(s): E-0 "Reactor Trip or Safety Injection", RO-1 "BOP Actions"

Proposed references to be provided to applicants during examination: None

Learning Objective: LIC-ESS-08 Obj 8

Question Source:	Bank #		
	Modified Bank #		(Note changes or attach parent)
	New	X	
Question History:	Last NRC Exam		

Question Cognitive Level:	Memory or Fundamental Knowledge	___
	Comprehension or Analysis	X

10 CFR Part 55 Content:	55.41	X
	55.43	___

Comments:

EA1 Ability to operate and monitor the following as they apply to a Large Break LOCA:

(CFR 41.7 / 45.5 / 45.6)

EA1.07 Containment isolation system

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	
	Group #	1	
	K/A #	00015/17AA1.05	
	Importance Rating	3.8	

Proposed Question:
Indian Point Unit 3 is operating at 100% power when the shaft on the No. 32 Reactor Coolant Pump (RCP) seizes, causing RCS flow to lower. Which of the following occurs as a result of the pump failure?

A. Reactor trip caused by RCP No. 32 breaker over current, followed by a safety injection caused by low RCS flow.
B. Reactor trip caused by low level in No. 32 steam generator, followed by a safety injection caused by high steam-flow coincident with low steam pressure in No. 32 steam generator.
C. OT-delta T Rod Stop, followed by a reactor trip caused by low RCS flow.
D. Reactor trip caused by the opening of RCP No. 32 breaker, followed by a safety injection caused by steamline differential pressure.

Proposed Answer:
D. Reactor trip caused by the opening of RCP No. 32 breaker, followed by a safety injection caused by steamline differential pressure.

Explanation (Optional):
A. Low RCS Flow does not cause a Safety Injection
B. Stopping an RCP in a loop will not cause a High Steam Flow Condition or a Low Steam Pressure Condition
C. OT- Delta T Rod Stop does not occur on a loss of a running RCP, since delta T goes down.
D. Reactor Trip signal above P-8 driven off of breaker open contacts, a steam line D/P condition will develop

Technical Reference(s): FSAR Chap 14

Proposed references to be provided to applicants during examination: None

Learning Objective: LIC-OPC-6 (5718) (As available)

Question Source: Bank # INPO 10531 IP3 4/96
Modified Bank # ________ (Note changes or attach parent)
New ________

Question History: Last NRC Exam 4/96
Question Cognitive Level: Memory or Fundamental Knowledge ____
Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 X
55.43 ____

Comments:
APE : 015/017 Ability to operate and/or monitor the following as they apply to Reactor Coolant Pump (RCP) Malfunctions (CFR 41.7 45.5,45.6)
AA1.05 RCS flow

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	
	Group #	1	
	K/A #	000022AA1.09	
	Importance Rating	3.3	

Proposed Question:
Indian Point 3 is operating at 100% power and has just received a "RCP Seal Inj. Filter High D/P" alarm on panel SFF. The Reactor Operator determines that Seal Injection Flow has been lost to all Reactor Coolant Pumps. The following RCP indications exist:

RCP	Seal Diff Pressure	Frame Vibration	Shaft Vibration	Seal Outlet Temp
31	400 psid	1.3 mils	9.3 mils	204 degrees F
32	400 psid	1.9 mils	10.1 mils	210 degrees F
33	400 psid	1.9 mils	12.2 mils	241 degrees F
34	400 psid	1.4 mils	8.5 mils	215 degrees F

Which statement describes the required actions, if any, for these conditions?

A. RCP operation may continue, there are no parameters requiring an immediate RCP Shutdown.
B. At Least ONE RCP must be immediately shutdown due to RCP Seal Outlet Temperatures exceeding operating limits.
C. At Least ONE RCP must be immediately shutdown due to RCP Shaft Vibration levels exceeding operating limits.
D. All RCPs must be immediately shutdown due to simultanous Loss of RCP Seal Injection Flow.

Proposed Answer:
B. . At Least ONE RCP must be immediately shutdown due to RCP Seal Outlet Temperatures exceeding operating limits.

Explanation (Optional):
A. RCP Seal Outlet Temperature Requires an immediate RCP shutdown above 235F
B. RCP Seal Outlet Temperature Requires an immediate RCP shutdown above 235F
C. RCP Vibration Levels are within limits
D. ONOP RCS-5 Requires Attachment 1 actions be taken without a direct step to trip any RCPs

Technical Reference(s): ARP - 009, ONOP- RCP-5

Proposed references to be provided to applicants during examination: None

Learning Objective: LIC-ONP-31 (6206) (As available)

Question Source: Bank # ____
Modified Bank # ____ (Note changes or attach parent)
New X

Question History: Last NRC Exam N/A

Question Cognitive Level: Memory or Fundamental Knowledge ____
Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 X
55.43 ____

Comments:
AA1. Ability to operate and / or monitor the following as they apply to

the Loss of Reactor Coolant Pump Makeup:
(CFR 41.7 / 45.5 / 45.6)
AA1.09 RCP seal flows, temperatures, pressures, and vibrations

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	
	Group #	1	
	K/A #	00025AK3.03	
	Importance Rating	4.1	

Proposed Question:
While operating in Reduced Inventory/Midloop conditions with the RCS temperature 130F. RCS level indication is noted to be 61' 8 " and lowering. Which of the following actions must be implemented for this condition ?

1. Raise RCS Level using SI pump(s), to raise pump Net Positive Suction Head.
2. Stop all running RHR pumps, to minimize the possibility of Gas Binding the pumps.
3. Raise RCS Pressure to greater than 150 psig, to minimize the possibility of Gas Binding the RHR pumps.
4. Establish level in at least 2 S/G's >15% narrow range, to establish a back up heat sink.

A. Actions 1 and 2
B. Actions 1 and 3
C. Actions 1, 2, and 3
D. Actions 2, 3, and 4

Proposed Answer:
A. Actions 1 and 2

Explanation (Optional):
Items 1 and 2 are direct procedure steps in ONOP RHR-2 " Loss of RHR With the RCS Drained or At Midloop"

Technical Reference(s): ONOP RHR-2

Proposed references to be provided to applicants during examination: None

Learning Objective: LIC-ONP-6 (1931) (As available)

Question Source: Bank # INPO 577 Beaver Valley 3/97
Modified Bank # ________ (Note changes or attach parent)
New ________

Question History: Last NRC Exam Beaver Valley 3/97

Question Cognitive Level: Memory or Fundamental Knowledge ______
Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 X
55.43 ______

Comments:
AK3 Knowledge of the reasons for the following responses as they apply to a loss of RHR: (CFR 41.5,41.145.6,45.13)
AK3.03 Immediate Actions contained in the EOPs for Loss of RHR

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	
	Group #	1	
	K/A #	000026AA2.02	
	Importance Rating	3.6	

Proposed Question:
Indian Point 3 is at 100% power.

- 31 and 32 CCW surge tank High-Low alarm conditions are present.
- 31 and 32 CCW surge tank levels are LOWERING.
- The CCW Surge Tank makeup valves are OPEN.
- Both CCW Surge Tank levels are <5% and operators have stopped all CCW Pumps per ONOP CC-1"Loss of Component Cooling"

Which ONE of the following is the cause of the loss of CCW?

A Tube Leak In.....

A. The Non- Regenerative Heat Exchanger
B. An RCP Thermal Barrier Heat Exchanger
C. The Seal Water Heat Exchanger
D. The Excess Letdown Heat Exchanger

Proposed Answer:
C. The Seal Water Heat Exchanger

Explanation (Optional):
The only system listed that operates at a sufficiently low pressure to cause leakage of CCW into the system is the Seal Water Heat Exchanger.

Technical Reference(s): ONOP CC-1

Proposed references to be provided to applicants during examination: None

Learning Objective: LIC-ONP-14 (5131) (As available)

Question Source: Bank # INPO-5108 Farley 10/95
Modified Bank # ______ (Note changes or attach parent)
New ______

Question History: Last NRC Exam 10/95

Question Cognitive Level: Memory or Fundamental Knowledge ______
Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 X
55.43 ______

Comments:
AA2. Ability to determine and interpret the following as they apply to the Loss of Component Cooling Water:
(CFR: 43.5 / 45.13)
AA2.02 The cause of possible CCW loss

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #		1
	Group #		1
	K/A #	2.4.41	
	Importance Rating		4.1

Proposed Question:
Indian Point 3 has just experienced a Manual Reactor Trip and Safety Injection from 100% power. A Pressurizer PORV has failed open. Actions in ONOP-RCS-2 "Malfunction of Pressurizer Pressure Control System" have been taken, and the associated PORV block MOV failed to close. Actions of E-0 "Reactor Trip or Safety Injection" are being taken.

Other plant conditions are as follows:

- All Control Rods are Inserted
- Total SI flow is 200gpm
- RCS Pressure is 1100psig
- Pressurizer Level is 100%
- R-11 reads 10e-4 uc/cc and is rising
- R-12 reads 10e-5 uc/cc and is rising
- PRT Level is offscale high
- PRT Pressure is 1 psig
- Containment Pressure is 1 psig and is rising

What is the appropriate EAL Classification?
A. Notification of Unusual Event
B. Alert
C. Site Area Emergency
D. General Emergency

Proposed Answer:
B. Alert

Explanation (Optional):
Indications of a LOCA- 1 Barrier Failed- Alert

Technical Reference(s): E Plan- EALs

Proposed references to be provided to applicants during examination: E Plan- EALs

Learning Objective: LIC-ERT-13 Obj- 5

Question Source: Bank # ____
Modified Bank # ____ (Note changes or attach parent)
New X

Question History: Last NRC Exam N/A

Question Cognitive Level: Memory or Fundamental Knowledge ____
Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 ____
55.43 X

Comments:
2.4.41 **Knowledge of the emergency action level thresholds and classifications.**
(CFR: 43.5 / 45.11)

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	
	Group #	1	
	K/A #	00029EA1.08	
	Importance Rating	4.5	

Proposed Question:

Given the following plant conditions:

- Reactor power was 65% when the turbine tripped and an ATWS occurred.
- The reactor tripped 20 seconds later when Train A reactor trip breaker was opened via the reactor trip pushbutton.
- Train B reactor trip breaker is failed closed, and will not operate locally or from the reactor trip pushbutton.
- No controls other than control rods and boration controls have been operated.
- Tave is 551 degrees F and lowering slowly.

Which one of the following correctly describes the status of feedwater isolation?

Feedwater isolation.....

A. has not occurred since both reactor trip breakers are required to be open.
B. has not occurred since Tave is too high.
C. has occurred since the temperature is less than the setpoint, and reactor power is <5%.
D. has occurred since the temperature is less than the setpoint, and 1 reactor trip breaker is open.

Proposed Answer:
D. has occurred since the temperature is less than the setpoint, and 1 reactor trip breaker is open.

Explanation (Optional):
A. Only 1 reactor trip breaker needs to be open, not train related and the temerature setpoint is 554 degrees F.
B. The temperature setpoint is less than 554 degrees F.
C. Feedwater isolation signal not dependent on reactor power.
D. Correct- Only requires 1 reactor trip breaker to be open and temperature is < 554 degrees F

Technical Reference(s): ______________ (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective: LIC-SPC-02 Obj 3

Question Source:	Bank #	
	Modified Bank #	(Note changes or attach parent)
	New	X
Question History:	Last NRC Exam	

Question Cognitive Level:	Memory or Fundamental Knowledge	
	Comprehension or Analysis	X
10 CFR Part 55 Content:	55.41	X
	55.43	

Comments:
EA1 Ability to operate and monitor the following as they apply to a reactor trip:
(CFR 41.7 / 45.5 / 45.6)
EA1.08 Rx Trip Switch Pushbuttons.
Relationship- Reactor Trip Pushbuttons depressed, feedwater isolation signal taken off of reactor trip breaker positions 1 button did not work.

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	
	Group #	1	
	K/A #	00029EK1.03	
	Importance Rating	3.8	

Proposed Question:
Which ONE of the following is the preferred method of injecting highly borated water into the RCS to insert the desired reactivity change during an ATWS per EOP FR-S.1 "Response To Nuclear Power Generation- ATWS?

A. Emergency Boration using the RWST
B. Emergency Boration by failing air to FCV- 110A
C. Emergency Boration through CH-MOV-333
D. Emergency Boration using Normal Boration via the Blender

Proposed Answer:
C. Emergency Boration through CH-MOV-333

Explanation (Optional):
Four paths are mentioned, CH-MOV-333 is the Normal Response Path, the others are in the response not obtained column. Candidate must choose path that maximizes reactivity addition rate.

Technical Reference(s): EOP FR-S.1 "Response To Nuclear Power Generation- ATWS

Proposed references to be provided to applicants during examination: None

Learning Objective: LIC-EOP-37 Obj10

Question Source: Bank # INPO-1157 Callaway-2/97
Modified Bank # ________ (Note changes or attach parent)
New ________

Question History: Last NRC Exam 2/97

Question Cognitive Level: Memory or Fundamental Knowledge X
Comprehension or Analysis ____

10 CFR Part 55 Content: 55.41 X
55.43 ____

Comments:
EK1 Knowledge of the operational implications of the following concepts as they apply to the ATWS:
(CFR 41.8 / 41.10 / 45.3)
EK1.03 Effects of boron on reactivity

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #		1
	Group #		1
	K/A #	00038EA2.12	
	Importance Rating		4.2

Proposed Question:
Indian Point 3 has just experienced a SGTR in 32 S/G. E-0 " Reactor Trip or Safety Injection" actions have led to a transition to E-3 "Steam Generator Tube Rupture". The operator has attempted to isolate steam supplies from the ruptured S/G by closing 32 MSIV. Overhead Annunciator "Main Steam Isolation Valve Closed" on Panel FAF "Turbine First Out Annunciator" has not alarmed. What is the next action that must be taken to limit the release of radioactivity from 32 S/G?

A. Stop 32 RCP to limit heat transfer from 32 S/G and commence a cooldown with Steam Generators using Steam Dumps.
B. Continue attempts to close the 32 MSIV and continue actions to cool down with all Steam Generators using Steam Dumps.
C. Isolate the remaining Steam Generators by closing their MSIVs and cool down using intact Steam Generator Atmospheric Valves.
D. Close down on intact Steam Generator Atmospheric Valves, continue attempts to close 32 MSIV.

Proposed Answer:
C. Isolate the remaining Steam Generators by closing their MSIVs and cool down using intact Steam Generator Atmospheric Valves.

Explanation (Optional):
The strategy spelled out in E-3 is to isolate the intact steam generators and cooldown in an expeditious manner to limit release from the ruptured S/G. Normal Steam Dumps become unavailable as a result of the Safety Injection. Cool down can not proceed until ruptured S/G is isolated from the intact S/G.

Technical Reference(s): E-3 "Steam Generator Tube Rupture"

Proposed references to be provided to applicants during examination: None

Learning Objective: LIC-EOP-35 Obj14

Question Source: Bank # ____
Modified Bank # ____ (Note changes or attach parent)
New X

Question History: Last NRC Exam N/A

Question Cognitive Level: Memory or Fundamental Knowledge ____
Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 ____
55.43 X

Comments:
EA2 Ability to determine or interpret the following as they apply to a SGTR:
(CFR 43.5 / 45.13)
EA2.12 Status of MSIV activating system

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	
	Group #	1	
	K/A #	000040AK2.02	
	Importance Rating	2.6	

Proposed Question:
Given the following conditions:

- The plant was at a steady-state power level of 90%.
- Pressurizer pressure and level have suddenly started lowering.
- Pressurizer pressure and level control systems are responding properly in AUTO.

WHICH ONE of the following parameters ALONE can be used, PRIOR to a plant trip to determine that the pressurizer changes are the result of a Steam Line Rupture?

A. Charging Flow
B. Loop Differential Temperature
C. Containment Humidity
D. Containment Particulate Radiation RMS

Proposed Answer:
B. Loop Differential Temperature

Explanation (Optional):
A. Charging flow will rise for both events.
B. Since loss of coolant accident does not have an immediate effect on RCS temperature and a Steam Line Rupture does, this is the determining sensor.
C. Containment Humidity rise for both events.
D. Response time is too fast for the Containment Particulate Detector to see the event.

Technical Reference(s): Gen Fund- Heat Balance

Proposed references to be provided to applicants during examination: None

Learning Objective: LIC-EOP-35 Obj2 (As available)

Question Source: Bank # INPO10633 IP3 7/96
Modified Bank # ________ (Note changes or attach parent)
New ________

Question History: Last NRC Exam IP3 7/96

Question Cognitive Level: Memory or Fundamental Knowledge ____
Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 X
55.43 ____

Comments:
AK2. Knowledge of the interrelations between the Steam Line Rupture and the following: (CFR 41.7 / 45.7)
AK2.02 Sensors and detectors

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	____	1
	Group #	____	1
	K/A #	000054AA2.03	
	Importance Rating	____	4.1

Proposed Question:
The following plant conditions exist:

- A Loss of Offsite Power has occurred
- All Control Rods have Inserted
- 31 and 32 ABFPs are aligned for normal operation
- Tave is lowering to 547 degrees F
- RCS Pressure is restoring to 2235 psig
- 33 ABFP is Stop Tagged for Maintenance
- 32 and 33 Emergency Diesels running and are supplying their respective buses
- 31 EDG will not start

Which Statement below describes the correct strategy to supply AFW?

A. AFW is not available, transition to FR-H.1, "Response To Loss of Secondary Heat Sink" upon transition to ES-0.1, "Reactor Trip Response"
B. AFW is not available, transition to FR-H.1, "Response To Loss of Secondary Heat Sink", at Step 5 "Check AFW Status" of E-0, "Reactor Trip or Safety Injection"
C. AFW is available via 32 ABFP, verify 32 ABFP has started and manually supply flow to all 4 Steam Generators at Step 4 "Determine If SI Is Actuated" of E-0, "Reactor Trip or Safety Injection"
D. AFW is available via 32 ABFP, verify 32 ABFP has started and manually supply flow to all 4 Steam Generators at Step 5 "Check AFW Status" of E-0, "Reactor Trip or Safety Injection"

Proposed Answer:
C. AFW is available via 32 ABFP, verify 32 ABFP has started and manually supply flow to all 4 Steam Generators at Step 4 "Determine If SI Is Actuated" of E-0, "Reactor Trip or Safety Injection"

Explaination (Optional)
A. Incorrect- 32 ABFP is Available
B. Incorrect- 32 ABFP is Available
C. Correct- 32 ABFP is Available and can supply all 4 S/Gs.
D. Incorrect- Transition has been made to ES-0.1.

Technical Reference(s): Non SI Blackout Logics

Proposed references to be provided to applicants during examination: None

Learning Objective: LIC-SPC-009 Obj 5 (As available)

Question Source: Bank # ______
Modified Bank # ______ (Note changes or attach parent)
New X

Question History: Last NRC Exam ______

Question Cognitive Level: Memory or Fundamental Knowledge ______
Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 ____
55.43 X

Comments:

AA2. Ability to determine and interpret the following as they apply to the Loss of Main Feedwater (MFW):

(CFR: 43.5 / 45.13)

AA2.03 Conditions and Reasons for AFW Pp Startup

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	
	Group #	1	
	K/A #	00055EA2.03	
	Importance Rating	3.9	

Proposed Question:
After a Station Blackout, WHICH ONE of the following 480VAC bus combinations must be reenergized to restore operability to the safeguards valves required to regain availability of both trains of safety injection?

A. Buses 2A and 3A
B. Buses 3A and 5A
C. Buses 5A and 6A
D. Buses 3A and 5A

Proposed Answer:
C. Buses 5A and 6A

Explanation (Optional):
ECA- 0.0 "Loss of All AC Power" Provides bus restoration guidance. LIC-ESS-01 Lesson Guide States that two trains of ECCS equipment are needed, energizing buses 5A and 6A gives 2 full trains, none of the other combinations do.

Technical Reference(s): ECA- 0.0 "Loss of All AC Power"

Proposed references to be provided to applicants during examination: None

Learning Objective: LIC-EOP-36 Obj11 (As available)

Question Source: Bank # INPO-10605 IP3- 7/96
Modified Bank # ______ (Note changes or attach parent)
New ______

Question History: Last NRC Exam IP3 7/96

Question Cognitive Level: Memory or Fundamental Knowledge X
Comprehension or Analysis ______

10 CFR Part 55 Content: 55.41 X
55.43 ______

Comments:
EA2 Ability to determine or interpret the following as they apply to a Station Blackout: (CFR 43.5 / 45.13)
EA2.03 Action Necessary To Restore Power

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	_ ___	1
	Group #	_ ___	1
	K/A #	00056 2.4.8	
	Importance Rating	_____	3.7

Proposed Question:
A Station Blackout occurred 4 hrs. ago. After the first hour, Emergency Diesel Generators were started and continue to run. A significant RCP Seal Leak developed during the Station Blackout. The control room crew has been implementing FR-C.1, "Response to Inadequate Core Cooling," when the RWST Low-Low Level alarm energizes and an additional Red Path develops on Secondary Heat Sink.

Which one of the following actions must be taken by the operating crew?

A. Remain in FR-C.1 until T-hot and the CETs show a lowering trend, and then transition to ES- 1.3, " Transfer to Cold Leg Recirculation."
B. Immediately transition to ES- 1.3, "Transfer to Cold Leg Recirculation."
C. Immediately transition to FR-H.1, "Response to Loss of Secondary Heat Sink".
D. Remain in FR-C.1 until a Core Cooling Orange Path is established, then transition to FR-H.1, "Response to Loss of Secondary Heat Sink."

Proposed Answer:
B. Immediately transition to ES- 1.3, "Transfer to Cold Leg Recirculation."

Explanation (Optional):
Westinghouse EOP Rules of usage prioritize swap to Cold Led Recirculation on Low RWST Level as taking precedence over all FRP's in use at the time that swapover is required.

Technical Reference(s): ____________________

Proposed references to be provided to applicants during examination: None

Learning Objective: LIC-EOP-31 Obj 12 (As available)

Question Source: Bank # INPO- 5587 Salem 1/96
Modified Bank # ________ (Note changes or attach parent)
New ________

Question History: Last NRC Exam Salem 1/96

Question Cognitive Level: Memory or Fundamental Knowledge ____
Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 _____
55.43 X b(5)

Comments:
2.4.8 **Knowledge of how the event-based emergency/abnormal operating procedures are used in conjunction with the symptom-based EOPs.**
(CFR: 41.10 / 43.5 / 45.13)

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	
	Group #	1	
	K/A #	00057 2.2.2	
	Importance Rating	3.5	

Proposed Question:
Indian Point Unit 3 is in Mode 1 at 12% reactor power with a plant start up in progress. Power is being raised to roll the main turbine and place it on the grid. 33 Instrument Bus Channel IV (Yellow) is lost and can not be restored for approximately 1 hour. What is the preferred mode of heat removal that is available to the operator?

A. Steam Dumps to the Condenser in Automatic, in Tave Mode.
B. Steam Dumps to the Condenser in Automatic, in Pressure Mode
C. Steam Dumps to the Condenser In Manual, in Pressure Mode.
D. Steam Dumps to the Condenser are not available, Steam Generator Atmospherics must be utilized.

Proposed Answer:
C. Steam Dumps to the Condenser In Manual, in Pressure Mode.

Explanation (Optional):
ONOP-EL-3 "Loss of an Instrument Bus" states that for a loss of 33 Instrument Bus, that Steam Dumps are only available in Manual Mode.They will be unreliable in Tave Mode of control for a loss of 33 Instrument Bus.

Technical Reference(s): ONOP-EL-3 "Loss of an Instrument Bus"

Proposed references to be provided to applicants during examination: None

Learning Objective: LIC-ONP-02 Obj2

Question Source:	Bank #		
	Modified Bank #		(Note changes or attach parent)
	New	X	

Question History: Last NRC Exam N/A

Question Cognitive Level:	Memory or Fundamental Knowledge	
	Comprehension or Analysis	X

10 CFR Part 55 Content:	55.41	X
	55.43	

Comments:
2.2.2 **Ability to manipulate the console controls as required to operate the facility between shutdown and designated power levels.**
(CFR: 45.2)

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	
	Group #	1	
	K/A #	000058AA1.03	
	Importance Rating	3.3	

Proposed Question:
Indian Point 3 has experienced a Loss of DC Bus 31. The crew has entered ONOP-EL-5 "Loss of a DC Bus". Maintenance has determined that there is a fault on 31 Battery. What is the proper sequence of actions required in accordance with ONOP-EL-5 "Loss of a DC Bus" to allow maintenance on 31 Battery?

A. Isolate 31 Battery by opening the incoming breaker, Remove Battery Output Fuses, Place DC Bus 31 on its Battery Charger.
B. Place DC Bus 31 on its Battery Charger, Isolate 31 Battery by opening the incoming breaker, Remove Battery Output Fuses.
C. Remove Battery Output Fuses, Isolate 31 Battery by opening the incoming breaker, Place DC Bus 31 on its Battery Charger.
D. Isolate 31 Battery by opening the incoming breaker, Place DC Bus 31 on its Battery Charger, Remove Battery Output Fuses.

Proposed Answer:
A. Isolate 31 Battery by opening the incoming breaker, Remove Battery Output Fuses, Place DC Bus 31 on its Battery Charger.

Explanation (Optional):
Procedurally, answer A provides the only correct sequence

Technical Reference(s): ONOP- EL-5 "Loss of a DC Bus

Proposed references to be provided to applicants during examination: None

Learning Objective: LIC- ONP-22 Obj 4

Question Source: Bank # ____
Modified Bank # ____ (Note changes or attach parent)
New X

Question History: Last NRC Exam N/A

Question Cognitive Level: Memory or Fundamental Knowledge ____
Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 X
55.43 ____

Comments:
AA1. Ability to operate and / or monitor the following as they apply to the Loss of DC Power:
(CFR 41.7 / 45.5 / 45.6)
AA1.03 Vital and battery bus components

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	____	1
	Group #	____	1
	K/A #	000062AA2.02	
	Importance Rating	____	3.6

Proposed Question:
Indian Point Unit 3 is operating at 100% power, with the 4/5/6 service water header as the essential header and the 31, 35, and 36 service water pumps are in operation. The following alarms are received in the control room:

- "480V SWGR MOTOR TRIP (COMMON)"
- "SERVICE WTR HDR (34.35.36) HIGH LOW PRESS"
- "SERVICE WATER STRAINER TROUBLE"

What action should the operating crew take in response to the alarms, and why?
A. Stop the No. 38 service water pump after it auto starts, since the the strainer is clogged on 38 service water pump.
B. Start the No. 38 service water pump, since the 35 service water pump breaker tripped.
C. Start the No. 34 service water pump, since the 35 service water pump breaker tripped.
D. Stop the No. 34 service water pump after it auto starts, since the strainer is clogged on 35 service water pump.

Proposed Answer:
C. Start the No. 34 service water pump, since the 35 service water pump breaker tripped.

Explanation (Optional):
A. 38 Service Water pump does not auto start, and can not be used as Tech Spec operable
B. 38 Service Water Pump is a backup pump and would only be started if normal header pumps could not be started.
C. 34 Service Water Pump is one of two pumps that should be started, indications are that 35 Pump tripped.
D. 34 Service Water Pump does not Auto Start on low header pressure

Technical Reference(s): ONOP-RW-1
Proposed references to be provided to applicants during examination: None

Learning Objective:	LIC-ONP-37 Obj 3		
Question Source:	Bank #	____	
	Modified Bank #	INPO-10517 IP3 4/96 (Changed Stem and Answer/Distractors to answer cause of loss of SWS as well as actions)	
	New	____	
Question History:	Last NRC Exam	IP3 4/96	
Question Cognitive Level:	Memory or Fundamental Knowledge		____
	Comprehension or Analysis		X
10 CFR Part 55 Content:	55.41 ____		
	55.43 X b.5		

Comments:
AA2. Ability to determine and interpret the following as they apply to the Loss of Nuclear Service Water:
(CFR: 43.5 / 45.13)
AA2.02 The cause of possible SWS loss

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	
	Group #	1	
	K/A #	000065 2.1.22	
	Importance Rating	3.3	

Proposed Question:
Indian Point 3 is at 100% power when a Loss of Instrument Air occurs. ONOP-IA-1" Loss of Instrument Air" has been entered. Instrument Air header pressure is at 60 psig and lowering due to an unisolable leak. Over the next 5 minutes, what operating MODE and condition will the plant be in?

A. Mode 1at 100% power, normal operation
B. Mode 1at 50% power, due to decreased Boiler Feed
C. Mode 3 at 0% power, due to a reactor trip only
D. Mode 3 at 0% power, due to a reactor trip and safety injection

Proposed Answer:
B. C. Mode 3 at 0% power, due to a reactor trip only

Explanation (Optional):
ONOP-IA-1 has 60psig as the threshold for initial operator actions. A manual reactor trip is required.

Technical Reference(s): ONOP-IA-1

Proposed references to be provided to applicants during examination: None

Learning Objective: LIC-ONP-27 Obj 3

Question Source: Bank # INPO- 10516 IP3 4/96
Modified Bank # ________(Note changes or attach parent)
New ________

Question History: Last NRC Exam IP3 4/96

Question Cognitive Level: Memory or Fundamental Knowledge ____
Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 X
55.43 _____

Comments:
2.1.22 **Ability to determine Mode of Operation.**
(CFR: 43.5 / 45.13)

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	___
	Group #	1	___
	K/A #	W/E 04 EK3.4	
	Importance Rating	3.8	

Proposed Question:
Given the following conditions:

- A LOCA outside containment has occurred
- The Reactor Operator has manually actuated a Safety Injection.
- The crew has completed ECA-1.2, "LOCA Outside Containment," and transitioned to ECA-1.1, "Loss of Emergency Coolant Recirculation"

Why is subcooling minimized once cooldown has been started?

A. This lowers the RCS pressure reducing the amount of RCS inventory loss.
B. It allows the operator to stop all SI and RHR pumps.
C. It allows RHR to be placed in service in cooldown mode earlier.
D. To limit concerns with causing Pressurized Thermal Shock of RCS Components.

Proposed Answer:
A. This lowers the RCS pressure reducing the amount of RCS inventory loss.

Explanation (Optional):

Technical Reference(s): ECA-1.2, "LOCA Outside Containment,"/ECA-1.1,"Loss of Emergency Coolant Recirculation"

Proposed references to be provided to applicants during examination: None

Learning Objective: LIC-EOP-33 (5374)

Question Source:		
	Bank #	INPO- 19486 Kewaunee 12/2000
	Modified Bank #	_______(Note changes or attach parent)
	New	_______

Question History: Last NRC Exam Kewaunee 12/2000

Question Cognitive Level:		
	Memory or Fundamental Knowledge	X
	Comprehension or Analysis	___

10 CFR Part 55 Content:		
	55.41	X
	55.43	___

Comments:
EK3. Knowledge of the reasons for the following responses as they apply to the (LOCA Outside Containment)
(CFR: 41.5 / 41.10, 45.6, 45.13)
EK3.4 RO or SRO function within the control room team as appropriate to the assigned position, in such a way that procedures are adhered to and the limitations in the facilities license and amendments are not violated.

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	____	1
	Group #	____	1
	K/A #	W/E04 EA2.2	
	Importance Rating		4.2

Proposed Question:
Given the following conditions on Indian Point 3:

- A LOCA has occurred outside of the Containment
- ECA- 1.1 "Loss Of Emergency Recirculation" is the procedure in effect
- A Steam Line Break on 32 Steam Generator occurs creating an ORANGE Path for Containment Pressure.

Which one of the following correctly describes the reasons for the operator's actions associated with the Containment Spray System under these conditions?

The Containment Spray System is operated as directed in...

A. ECA- 1.1 "Loss Of Emergency Recirculation" because it establishes minimum required containment spray flow and conserves RWST inventory.
B. ECA- 1.1 "Loss Of Emergency Recirculation" since FRPs are not implemented during the performance of ECA- 1.1.
C. FR-Z. 1 "Response To High Containment Pressure" because the actions concerning Containment Spray operation are more restrictive.
D. FR-Z. 1 "Response To High Containment Pressure" since restoration of the critical safety function takes precedence.

Proposed Answer:
A. ECA- 1.1 "Loss Of Emergency Recirculation" because it establishes minimum required containment spray flow and conserves RWST inventory.

Explanation (Optional):
A. Correct- ECA 1.1 establishes desired relationship between heat removal and containment spray strategy with a loss of recirc capability
B. FRPs are implemented during ECA 1.1
C. FR- Z.1 actions are less restrictive, and procedure defers to ECA 1.1 if in effect
D. FR- Z.1 does take precedence, however the Containment Spray System operation is defered to ECA 1.1

Technical Reference(s): ECA- 1.1 "Loss Of Emergency Recirculation", FR-Z. 1 "Response To High Containment Pressure"

Proposed references to be provided to applicants during examination: None

Learning Objective: LIC-EOP-41 Obj 11

Question Source:	Bank #	INPO- 15557 Salem 2/99
	Modified Bank #	______ (Note changes or attach parent)
	New	______
Question History:	Last NRC Exam	Salem 2/99
Question Cognitive Level:	Memory or Fundamental Knowledge	______
	Comprehension or Analysis	X
10 CFR Part 55 Content:	55.41 ______	
	55.43 X	

Comments:

EA2. Ability to determine and interpret the following as they apply to the (LOCA Outside Containment)

(CFR: 43.5 / 45.13)

EA2.2 Adherence to appropriate procedures and operation within the limitations in the facility*s license and amendments.

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	
	Group #	1	
	K/A #	W/E 11 EK2.2	
	Importance Rating	4.3	

Proposed Question:
The plant has experienced a Loss of Coolant Accident. Both trains of Emergency Coolant Recirculation have become unavailable. RWST level has lowered to less than 1.5 feet and all suction sources from the RWST have been stopped. Step 27 of ECA- 1.1, "Loss of Emergency Coolant Recirculation" directs that all S/Gs be depressurized to less than 700 psig. What is the desired outcome of this action?

A. It allows maximum AFW flow to the S/Gs, so that levels can rapidly be restored.
B. It sets up conditions for controlled injection to the RCS from the accumulators.
C. It ensures that there is adequate subcooling for restart of the RCPs.
D. It decreases RCS temperature and pressure which reduces break flow from the LOCA.

Proposed Answer:
B. It sets up conditions for controlled injection to the RCS from the accumulators.

Explanation (Optional):
The Westinghouse EOP Basis document describes the reason that Steam Generators are depressurized in the instance is to inject Accumulators in a controlled fashion to add RCS inventory.

Technical Reference(s): Westinghouse Owners Group Guidance For ECA- 1.1, "Loss of Emergency Coolant Recirculation"

Proposed references to be provided to applicants during examination: None

Learning Objective: LIC-EOP-33 (5603)

Question Source:
Bank # INPO- 3414 9/98 Braidwood
Modified Bank # ______(Note changes or attach parent)
New ______

Question History: Last NRC Exam 8/98 Braidwood

Question Cognitive Level:
Memory or Fundamental Knowledge X
Comprehension or Analysis ______

10 CFR Part 55 Content:
55.41 X
55.43 ______

Comments:
EK2. Knowledge of the interrelations between the (Loss of Emergency Coolant Recirculation) and the following:
(CFR: 41.7 / 45.7)
EK2.2 Facility*s heat removal systems, including primary coolant, emergency coolant, the decay heat removal systems, and relations between the proper operation of these systems to the operation of the facility.

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	
	Group #	1	
	K/A #	W/E 05 EK2.2	
	Importance Rating	4.2	

Proposed Question:
A Reactor Trip with SI occurs. The operators perform the immediate action steps, verify SI and RHR flow, and check Auxiliary Feedwater flow. Minimum Auxiliary Feedwater flow cannot be established, operators enter FR-H.1, "Response to Loss of Secondary Heat Sink". An operator checks RCS pressure; it is less than all S/G pressures. The operators are directed by FR-H.1 to E-1, "Loss of Reactor or Secondary Coolant".

Based on this information, select the ONE statement that correctly summarizes plant conditions:

A. A Large Break LOCA is in progress; a secondary heat sink is required.
B. A Large Break LOCA is in progress; a secondary heat sink is not required.
C. A Small Break LOCA is in progress; a secondary heat sink is required.
D. A Small Break LOCA is in progress; a secondary heat sink is not required.

Proposed Answer:
B. A Large Break LOCA is in progress; a secondary heat sink is not required.

Explanation (Optional):
Per WOG Guidance, RCS Pressure being less than S/G pressure in FR-H.1 indicates a sufficiently large LOCA in progress to remove heat via break flow, and ECCS injection.
A. Incorrect- Secondary Heat Sink not required
B. Correct- Large LOCA and Secondary Heat Sink Is Not Required
C. Incorrect- By definition LOCA is "large"
D. Incorrect- By definition LOCA is "large"

Technical Reference(s): FR-H.1, "Response to Loss of Secondary Heat Sink"

Proposed references to be provided to applicants during examination: None

Learning Objective: LIC-EOP-39 Obj- J

Question Source: Bank # INPO-4196 Braidwood 4/96
Modified Bank # ______(Note changes or attach parent)
New ______

Question History: Last NRC Exam Braidwood 4/96

Question Cognitive Level: Memory or Fundamental Knowledge ______
Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 X
55.43 ______

Comments:
EK2. Knowledge of the interrelations between the (Inadequate Heat Transfer) and the following:
(CFR: 41.7 / 45.7)
EK2.2 Facility*s heat removal systems, including primary coolant, emergency coolant, the decay heat removal systems, and relations between the proper operation of these systems to the operation of the facility.

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	
	Group #	2	
	K/A #	000003AK3.05	
	Importance Rating	4.1	

Proposed Question:
A dropped rod has occurred and the Operating Crew is responding in accordance with plant procedures. A step in the procedure, which references Technical Specifications, states, "If Axial Flux Difference (AFD) cannot be restored within the required band, then reduce thermal power to less than or equal to 50% within the next 30 minutes."

The basis for this action includes all **EXCEPT** which one of the following choices?

A. To ensure adequate shutdown margin is maintained during recovery of the dropped rod.
B. To limit power distribution skewing so core peaking factors are consistent with assumptions used in the safety analyses.
C. To prevent invalidating the conclusions of the transient and accident analyses with regard to fuel clad integrity.
D. To ensure Heat Flux Hot Channel Factor is NOT exceeded during normal operation or in the event of xenon redistribution following power changes.

Proposed Answer:
A. To ensure adequate shutdown margin is maintained during recovery of the dropped rod.

Explanation (Optional):
Answers B,C,D are directly extracted from the IP3 Tech Spec Basis Document. Answer A is the exception since Shutdown Margin is not affected by the position of a dropped rod at power.
Technical Reference(s): IP3 Tech Specs and Basis Document

Proposed references to be provided to applicants during examination: None

Learning Objective: LIC-POP-15 (1336)

Question Source: Bank # INPO - 20664 Point Beach 2/02
Modified Bank # ______(Note changes or attach parent)
New ______

Question History: Last NRC Exam Point Beach 2/02

Question Cognitive Level: Memory or Fundamental Knowledge X
Comprehension or Analysis ______

10 CFR Part 55 Content: 55.41 X
55.43 ______

Comments:
AK3. Knowledge of the reasons for the following responses as they apply to the Dropped Control Rod:(CFR 41.5,41.10 / 45.6 / 45.13)
AK3.05 Tech Spec Limit s For Load Reduction to 50% power if flux cannot be brought back within the specified target band.

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	____	1
	Group #	____	2
	K/A #	000028AA2.02	
	Importance Rating		3.8

Proposed Question:
The following conditions exist:

- Reactor and turbine power are at 40%.
- Rod control is in manual
- All other systems are normally aligned in AUTOMATIC
- The Average Tave has just failed to 590 degrees F

What will happen to Pressurizer level with no Operator Action, and what actions must be taken to mitigate the failure?

With NO Operator Action Pressurizer level will........

A. lower to 32.0%; and to mitigate this, the charging pump speed controller must be taken to manual in accordance with ONOP-RPC-1, "Instrument Failures".
B. maintain at its present value; and no mitigating actions are required other than to repair the Tave Summer.
C. lower to 23.1%; and to mitigate this, letdown must be isolated and the Reactor Tripped in accordance with ONOP-CVCS-1, "Charging and Letdown Malfunctions".
D. raise to 51.3%; and to mitigate this, the charging pump speed controller must be taken to manual in accordance with ONOP-RPC-1, "Instrument Failures".

Proposed Answer:
D. raise to 51.3%; and to mitigate this the charging pumps speed controller must be taken to manual in accordance with ONOP-RPC-1, "Instrument Failures".

Explanation (Optional):
Tave no load is 547F which corresponds to 23.1% Pzr Level. Tave Failed High is clamped at 571F which corresponds to Pzr Level of 51.3%. Tave at 100% Power at IP3 is 567F (Not Westinghouse Standard) which corresponds to a Pzr Level of 46.6%. A,B,C Distractors fit various possible failure modes, but for this question, D is the correct response. In addition, ONOP-RPC-1, "Instrument Failures" is the procedure that provides guidance for the problem.

Technical Reference(s): ONOP-RPC-1

Proposed references to be provided to applicants during examination: None

Learning Objective: LIC-IXC-10 Obj 5

Question Source: Bank # ____
Modified Bank # INPO- 5330 Salem 1/96 (Note changes or attach parent), Changed to include procedural actions, and included summer failure.
New ____

Question History: Last NRC Exam Salem 1/96

Question Cognitive Level: Memory or Fundamental Knowledge ____

Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 ____
55.43 X

Comments:

AA2. Ability to determine and interpret the following as they apply to the Pressurizer Level Control Malfunctions: (CFR: 43.5 / 45.13)

AA2.02 PZR level as a function of power level or T-ave. including interpretation of malfunction

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	____	1
	Group #	____	2
	K/A #	000051AA2.02	
	Importance Rating		4.1

Proposed Question:

Given the following conditions:

- Plant power is at 88% and being reduced because decreasing condenser vacuum has been noted on recorder PR-1151.

WHICH ONE of the following combinations of condenser vacuum conditions requires an immediate Reactor and Turbine Trip?

Condenser 31/ Condenser 32/ Condenser 33 (Turbine Exhaust Hood Temperature)

A. 25.6 in. Hg/ 27.5 in. Hg/ 26.5 in. Hg (Turbine Exhaust Hood Temperature- 200F)
B. 26.0 in. Hg/ 26.5 in. Hg/ 29.7 in. Hg (Turbine Exhaust Hood Temperature- 180F)
C. 27.2 in. Hg/ 29.5 in. Hg/ 29.8 in. Hg (Turbine Exhaust Hood Temperature- 245F)
D. 26.2 in. Hg/ 25.7 in. Hg/ 28.2 in. Hg (Turbine Exhaust Hood Temperature- 225F)

Proposed Answer:
B. 26.0 in. Hg/ 26.5 in. Hg/ 29.7 in. Hg (Turbine Exhaust Hood Temperature- 180F)

Explanation (Optional):
There are 3 ONOP referenced Rx Trip criteria >P-8:Condenser Vacuum <25.5in Hg, Shell Differential of >3 in Hg, Turbine Exhaust Hood Temp > 250F for 15 Min. Mathmatically B is the only correct answer. The candidate must apply all 3 criteria.

Technical Reference(s): ONOP-C-1

Proposed references to be provided to applicants during examination: None

Learning Objective: LIC-ONP-10 Obj- 3

Question Source: Bank # ____
Modified Bank # INPO-10747 IP3 7/96 (Added Turbine Exhaust Hood Criteria To Stem and Distractors)
New ____

Question History: Last NRC Exam IP3 7/96

Question Cognitive Level: Memory or Fundamental Knowledge ____
Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 ____
55.43 X b.5

Comments:
AA2. Ability to determine and interpret the following as they apply to the Loss of Condenser Vacuum:
(CFR: 43.5 / 45.13)
AA2.02 Conditions requiring reactor and/or turbine trip

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	
	Group #	2	
	K/A #	000061AA2.02	
	Importance Rating	3.2	

Proposed Question:
WHICH ONE of the following Area Radiation Monitor (ARM) readings will cause an automatic action to occur?

A. TSC HVAC Duct ARM (R-44A) reading 50 mR/hr
B. Control Room ARM (R-1) reading 0.4 mR/hr
C. VC 80' ARM (R-2) reading 60 mR/hr
D. CVCS Tank 31 ARM (R-34A) reading 120 mR/hr

Proposed Answer:
A. TSC HVAC Duct ARM (R-44A) reading 50 mR/hr

Explanation (Optional):
A. Alarm and Actuation Setpoint- 10 mR/hr- Correct Answer
B. Alarm and Actuation Setpoint- 1mR/hr
C. No Auto Action- Alarm Setpoint- 50mR/hr (at power), 20mR/hr (S/D)
D. No Auto Action- Alarm Setpoint- 100mR/hr

Technical Reference(s): LIC-RDM-03

Proposed references to be provided to applicants during examination: None

Learning Objective: LIC-RDM-03 Obj. 2

Question Source:	Bank #	INPO- 10747 IP3 7/96
	Modified Bank #	_______(Note changes or attach parent)
	New	_______

Question History: Last NRC Exam IP3 7/96

Question Cognitive Level:	Memory or Fundamental Knowledge	X
	Comprehension or Analysis	

10 CFR Part 55 Content:	55.41	X
	55.43	

Comments:
AA2. Ability to determine and interpret the following as they apply to the Area Radiation Monitoring (ARM) System Alarms:
(CFR: 43.5 / 45.13)
AA2.02 Normal radiation intensity for each ARM system channel

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	
	Group #	2	
	K/A #	W/E 14 AK1.01	
	Importance Rating	3.1	

Proposed Question:
The plant has experienced a Large Break LOCA. All reactor protective systems and engineered safety features systems functioned normally. Containment pressure peaked at 45 psig and has been lowering in a linear fashion. At 22 psig decreasing, the containment pressure rapidly reduced to 3 psig in approximately 5 minutes. What caused the change in the rate of containment depressurization?

At 22 psig......

A. Containment Spray becomes more effective at removing energy from the containment atmosphere.
B. Containment Fan Coolers become more effective at removing energy from the containment atmosphere.
C. Containment leak rate experienced a prompt increase due to one or more containment penetration seals failing.
D. The containment was vented in accordance with FR-Z.1 "Response To High Containment Pressure".

Proposed Answer:
C. At 22 psig, containment leak rate experienced a prompt increase due to one or more failed containment penetration seals.

Explanation (Optional):
A. As pressure and containment temperature lowers the rate of energy removal lowers.
B. As pressure and containment temperature lowers the rate of energy removal lowers.
C. Correct Answer- Used as a basis in EAL Guidelines to call containment safety barrier failed.
D. FR-Z.1 "Response To High Containment Pressure" does not have venting actions.

Technical Reference(s): FR-Z.1 "Response To High Containment Pressure"

Proposed references to be provided to applicants during examination: None

Learning Objective: LIC-EOP-41 Obj 3

Question Source:	Bank #	
	Modified Bank #	(Note changes or attach parent)
	New	X

Question History: Last NRC Exam N/A

Question Cognitive Level:	Memory or Fundamental Knowledge	
	Comprehension or Analysis	X

10 CFR Part 55 Content:	55.41	X
	55.43	

Comments:
AK1. Knowledge of the operational implications of the following concepts as they apply to Loss of Containment Integrity:
(CFR 41.8 / 41.10 / 45.3)
AK1.01 Effect of pressure on leak rate

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	
	Group #	2	
	K/A #	W/E 14 EK2.2	
	Importance Rating	3.8	

Proposed Question:
Following a small break loss of coolant accident inside containment concurrent with a faulted SG inside containment, the following conditions are noted:

- RCS subcooling is indicating 120 degrees F
- RCS pressure is 1380 psig
- All SI and RHR pumps are operating
- SI pumps are injecting to the RCS
- Containment spray has automatically actuated, and containment pressure is 25 psig
- The crew is implementing FR-Z.1, "Response to High Containment Pressure"

Which one of the following correctly describes why the reactor coolant pumps are tripped under these conditions?

A. To prevent RCP motor winding damage due to exposure to spray water.
B. To prevent subsequent core damage due to pumping a two-phase mixture.
C. To prevent RCP damage due to Loss of NPSH.
D. To prevent RCP bearing damage due to lack of cooling.

Proposed Answer:
D. To prevent RCP bearing damage due to lack of cooling.

Explanation (Optional):
A. Incorrect- RCPs are designed to operate with spray, as long as cooling to pump to present
B. Incorrect- RCS Pressure is not below RCP Trip Criteria
C. Incorrect- Adequate NPSH exists
D. Correct- Phase B Isolates RCP Cooling for bearings

Technical Reference(s): FR-Z.1 " Response To High Containment Pressure"

Proposed references to be provided to applicants during examination: None

Learning Objective: LIC-EOP-41 (5781,5788)

Question Source: Bank # INPO- 17212 (Salem 1 1/98)
Modified Bank # ______(Note changes or attach parent)
New ______

Question History: Last NRC Exam Salem 1 1/98
Question Cognitive Level: Memory or Fundamental Knowledge ____
Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 X
55.43 ____

Comments:
EK2. Knowledge of the interrelations between the (High Containment Pressure) and the following: (CFR: 41.7 / 45.7)
EK2.2 Facility*s heat removal systems, including primary coolant, emergency coolant, the decay heat removal systems, and relations between the proper operation of these systems to the operation of the facility.

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	
	Group #	2	
	K/A #	W/E 6 EK 1.3	
	Importance Rating	3.6	

Proposed Question:
The following conditions exist at Indian Point 3 after a Reactor Trip and Safety Injection:

- All Control Rods Are Inserted
- Cooldown is in Progress on Recirculation Cooling
- RCS Subcooling is 0F
- RCPs are NOT running
- Highest Qualified CET Temperature is 685F
- RVLIS Full Range Level is 50%
- The following alarms exist on Panel SAF- "High Tave", "Pressurizer Low Pressure", and "Pressurizer Low Level"

What is the current status of the Core Cooling Critical Safety Function (CSF), and the core cooling strategy based on the Functional Recovery Procedures ?

A. Core Cooling CSF is Green, continue with cooldown on Recirculation Cooling.
B. Core Cooling CSF is Yellow, FR-C.3 "Response To Saturated Core Cooling" may be implemented , and actions are taken to raise subcooling margin.
C. Core Cooling CSF is Orange, FR-C.2 " Response To Degraded Core Cooling" is implemented, and take actions to raise water level in the reactor vessel.
D. Core Cooling CSF is Red, FR-C.1 " Response To Inadequate Core Cooling" is implemented, and reactor coolant pumps are operated to improve core cooling.

Proposed Answer:
B. Core Cooling CSF is Yellow, FR-C.3 "Response To Saturated Core Cooling" may be implemented , and actions are taken to raise subcooling margin.

Explanation (Optional):
Conditions indicate that a Core Cooling Yellow Path exists, this makes A,C,D wrong.

Technical Reference(s): FR-C.1,FR-C.2,FR-C.3

Proposed references to be provided to applicants during examination: CFSTs

Learning Objective: LIC-EOP 38 Obj2,3,4

Question Source:	Bank #		
	Modified Bank #		(Note changes or attach parent)
	New	X	
Question History:	Last NRC Exam	N/A	
Question Cognitive Level:	Memory or Fundamental Knowledge		
	Comprehension or Analysis	X	

10 CFR Part 55 Content: 55.41 X
55.43

Comments:
EK1 Knowledge of Operational Implications of the following concepts as they apply to Saturated Core Cooling (CFR 41.8,41.1,45.3)
EK1.3 Annunciators and conditions indicating signals and remedial actions

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	____	1
	Group #	____	2
	K/A #	W/E 6 EA 2.2	
	Importance Rating		4.1

Proposed Question:

When performing actions in accordance with FR-C.2 " Response To Degraded Core Cooling", the operator is directed to verify SI valve alignment per attachment "Injection Phase SI Valve Line Up" with the SI system in the Cold Leg Injection Mode. Which of the following valves shall be CLOSED per this system alignment?

A. BIT Outlet Valve (1835 A,B)
B. CCW to RHR Heat Exchanger (822 A,B)
C. RWST To Safety Injection Pumps (1810)
D. RHR Discharge To Containment Building Spray Header (889 A,B)

Proposed Answer:
D. RHR Discharge To Containment Building Spray Header (889 A,B)

Explanation (Optional):
A. Cold Leg Injection Injects Through The BIT
B. CCW is Aligned to the RHR Heat Exchanger
C. RWST is aligned as the suction source to the SI Pumps
D. Should be closed during injection phase, but may be opened as a part of swapping to Cold Leg Recirc.

Technical Reference(s): FR-C.2 " Response To Degraded Core Cooling"

Proposed references to be provided to applicants during examination: None

Learning Objective: LIC-EOP-38 Obj 15

Question Source: Bank # INPO 579 Beaver Valley 3/97
Modified Bank # ______(Note changes or attach parent)
New ______

Question History: Last NRC Exam Beaver Valley 3/97

Question Cognitive Level: Memory or Fundamental Knowledge ____
Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 ____
55.43 X

Comments:
EA2 Ability to determine and interpret the following as they apply to degraded core cooling (CFR 43.5, 45.13)
EA 2.2 Adherence to appropriate procedures and operation within limitations in the facilities license and amendments

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	
	Group #	2	
	K/A #	000076AK3.05	
	Importance Rating	3.8	

Proposed Question:

Indian Point 3 experienced a reactor trip from 100% power due to a main transformer protective relaying fault. Operators have transitioned from E-0 "Reactor Trip or Safety Injection" to ES-0.1 "Reactor Trip Response". Valid alarms are received on R63A and B (GFF Detectors) and annunciator "R63A/B GFFD" is in alarm. Charging pump area radiation monitors show a rising trend, but have yet to alarm. The CRS implements ONOP RCS-4 " High Radioactivity In Reactor Coolant System". Which statement describes the correct actions to take with the CVCS system and the basis for those actions?

A. Letdown is diverted to the CVCS HUT to limit radiation levels in the charging pump area.
B. Charging and Letdown are maximized through CVCS ion exchangers to maximize clean up.
C. Charging and Letdown are isolated to contain the high radioactivity within the containment building.
D. Excess Letdown is placed in service through CVCS ion exchangers to maximize clean up.

Proposed Answer:
B. Charging and Letdown are maximized through CVCS ion exchangers to maximize clean up.

Explanation (Optional):
Per ONOP-RCS-4 Charging and Letdown are maximized to clean up RCS. Excess letdown goes though seal water heat exchanger directly to VCT, and can not be directed through ion exchangers.

Technical Reference(s): ONOP-RCS-4 "High Radioactivity In Reactor Coolant System"

Proposed references to be provided to applicants during examination: None

Learning Objective: LIC-ONP-30 Obj 2

Question Source: Bank # ______
Modified Bank # ______ (Note changes or attach parent)
New X

Question History: Last NRC Exam N/A

Question Cognitive Level: Memory or Fundamental Knowledge ______
Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 X
55.43 ______

Comments:
AK3. Knowledge of the reasons for the following responses as they apply to the High Reactor Coolant Activity : (CFR 41.5,41.10 / 45.6 / 45.13)
AK3.05 Corrective actions as a result of high fission product radioactivity level in the RCS

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	____
	Group #	2	____
	K/A #	W/E01EA1.3	
	Importance Rating	3.8	

Proposed Question:
The operating crew is responding to a Main Steam Line Break on 31 Steam Generator inside containment. The following conditions presently exist:

The operating crew has transitioned from E-2, "FAULTED STEAM GENERATOR ISOLATION", to E-1, "LOSS OF REACTOR OR SECONDARY COOLANT".

- 31 S/G is dry with pressure <100 psig.
- 32 S/G narrow range level is 20% and rising, with pressure stable at 950 psig.
- 33 S/G narrow range level is 5% and rising, with pressure stable at 950 psig.
- 34 S/G narrow range level is 10% and rising, with pressure stable at 950 psig.
- Pressurizer Level is 15% and rising.
- Containment Pressure is 18 psig and lowering.
- Containment Temperature is 240 degrees F and lowering.
- RCS Subcooling indicates stable at 80 degrees F.
- RCS Pressure is 2150 psig and rising slowly.

Which ONE of the following conditions will complete the transition criteria from E-1, "LOSS OF REACTOR OR SECONDARY COOLANT" to ES-1.1, "SI TERMINATION"?

A. 33 S/G level rises to 14%.
B. Pressurizer level rises to 32%.
C. RCS Subcooling rises to 112 degrees F.
D. RCS pressure rises to 2215 psig.

Proposed Answer:
B. Pressurizer level rises to 32%.

Explanation (Optional):
A. S/G level criteria has already been met by 32 S/G >14%
B. Pressurizer level must rise to >32% for adverse containment conditions
C. RCS subcooling criteria has already been met, it is greater than 63 degrees F.
D. RCS Pressure criteria has already been met, it is greater than 2000 psig.

Technical Reference(s): E-1, "LOSS OF REACTOR OR SECONDARY COOLANT", ES1.1 "SI Termination"

Proposed references to be provided to applicants during examination: None

Learning Objective: LIC-EOP-33 Obj V

Question Source: Bank # INPO- 15387 Surry 1 4/8/99
Modified Bank # _______(Note changes or attach parent)
New _______

Question History: Last NRC Exam Surry 1 4/8/99

Question Cognitive Level: Memory or Fundamental Knowledge ____
Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 X
55.43 ____

Comments:
EA1. Ability to operate and / or monitor the following as they apply to the (Reactor Trip or Safety Injection/Rediagnosis)
(CFR: 41.7 / 45.5, 45.6)
EA1.3 Desired operating results during abnormal and emergency situations.

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	____	1
	Group #	___	2
	K/A #	W/E 01 2.3.10	
	Importance Rating		3.3

Proposed Question:
Indian Point 3 has experienced a Reactor Trip and Safety Injection due to a LOCA. Conditions have been met for establishing RHR cooling. The EOF is fully manned and is activated. An operator must enter the RHR pump room to prepare for Shutdown Cooling. Radiation levels in the RHR pump room are 2 Rem/hr due to fuel failures that were realized during the event. The operator is predicted to exceed radiation exposure levels specified in plant procedures. Which one of the following identifies the individual who must give final authorization for radiation exposures up to 5 REM (TEDE) during ths emergency event?

A. The Individual's Supervisor
B. The Shift Manager
C. The Dose Assessor
D. The Emergency Director

Proposed Answer:
D. The Emergency Director

Explanation (Optional):
This is the correct level of approval per IPEC Emergency Plan Part 1C, Form 6

Technical Reference(s): AP-7 Radiation Protection Plan

Proposed references to be provided to applicants during examination: None

Learning Objective: LIC-RAD-5 Obj 5.1.5

Question Source:	Bank #	INPO- 10560 IP-3 7/96
	Modified Bank #	_______(Note changes or attach parent)
	New	_______

Question History: Last NRC Exam IP-3 7/96

Question Cognitive Level:	Memory or Fundamental Knowledge	X
	Comprehension or Analysis	____

10 CFR Part 55 Content:	55.41	_____
	55.43	X

Comments:
2.3.10 **Ability to perform procedures to reduce excessive levels of radiation and guard against personnel exposure.**
(CFR: 43.4 / 45.10)

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #		1
	Group #		2
	K/A #	W/E 15 2.4.21	
	Importance Rating		4.3

Proposed Question:
The following plant conditions exist:

- A Reactor Trip and Safety Injection occurred 20 minutes ago
- Operators are responding to the event using E-1, " Loss of Reactor or Secondary Coolant"
- Containment Pressure is 15 psig and lowering after peaking at 22.5 psig 3 minutes into the event
- Containment Radiation Levels are- 2 R/hr are read on R-25, and R-26 Containment High Range Rad Monitors.
- Containment Sump Level is greater than 51 ft. and rising

What is the current status of the Containment Safety Function, and what actions are required?

A. The Containment Safety Function Status is Yellow, continue in E-1, " Loss of Reactor or Secondary Coolant".
B. The Containment Safety Function is Orange, immediately transition to FR-Z.2, "Response To Containment Flooding".
C. The Containment Safety Function is Orange, immediately transition to FR-Z.1, "Response To High Containment Pressure".
D. The Containment Safety Function is Yellow, immediately transition to FR-Z.3, "Response To High Containment Radiation".

Proposed Answer:
B. The Containment Safety Function is Orange, immediately transition to FR-Z.2, "Response To Containment Flooding".

Explanation (Optional):
The only CSFST criteria being exceeded is for Containment Level of 49 ft 8in. . The Containment Pressure was Orange, however pressure has reduced, and at the time of review is less than 22 psig.

Technical Reference(s): FR-Z.2 "Response to Containment Flooding"

Proposed references to be provided to applicants during examination: None

Learning Objective: LIC-EOP-41

Question Source:
Bank # ____
Modified Bank # ____ (Note changes or attach parent)
New X

Question History: Last NRC Exam ____

Question Cognitive Level:
Memory or Fundamental Knowledge ____
Comprehension or Analysis X

10 CFR Part 55 Content:
55.41 ____
55.43 X

Comments:

2.4.21 **Knowledge of the parameters and logic used to assess the status of safety functions including:**

1. Reactivity control
2. Core cooling and heat removal
3. Reactor coolant system integrity
4. Containment conditions
5. Radioactivity release control.

(CFR: 43.5 / 45.12)

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	
	Group #	2	
	K/A #	W/E 16 EK 1.2	
	Importance Rating	3.2	

Proposed Question:
Given the following conditions for Indian Point 3:

- A LOCA has occurred.
- The crew is performing cooldown as directed by ES-1.2 " Post LOCA Cooldown and Depressurization".
- SI Pumps are still operating in injection phase.
- The Containment Iodine Filter Fans are not running.
- Containment Spray was secured
- Three Containment FCUs are running.
- Containment pressure is stable at 2.2 psig.
- The CRS transitions to FR-Z.3 "Response to High Containment Radiation Level" in response to a YELLOW path condition.

In addition to running Containment Iodine Filter Fans , what action does the CRS direct in FR-Z.3 "Response to High Containment Radiation Level" in order to help reduce containment radiation levels?

A. Containment Post Accident Ventilation is initiated
B. An RHR Pump is aligned to supply the associated Containment Spray Header
C. Initiate a Phase B Containment Isolation Signal
D. The Idle Containment FCUs are started

Proposed Answer:
D. The Idle Containment FCUs are started

Explanation (Optional):
There are only a few actions in the FR-Z.3 strategy: Verify Containment Ventilation Isolation, Run Containment Iodine Filter Fans, Start All Containment FCUs

Technical Reference(s): None

Proposed references to be provided to applicants during examination: None
Learning Objective: LIC-EOP-41 Obj 12

Question Source:	Bank #	INPO- 19494 Kewaunee 12/2000
	Modified Bank #	____(Note changes or attach parent)
	New	
Question History:	Last NRC Exam	Kewaunee 12/2000
Question Cognitive Level:	Memory or Fundamental Knowledge	X
	Comprehension or Analysis	
10 CFR Part 55 Content:	55.41 X	
	55.43	

Comments:
EK1. Knowledge of the operational implications of the following concepts as they apply to the (High Containment Radiation)
(CFR: 41.8 / 41.10, 45.3)
EK1.2 Normal, abnormal and emergency operating procedures associated with (High containment Radiation).

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	
	Group #	2	
	K/A #	W/E 09 EA 1.2	
	Importance Rating	3.9	

Proposed Question:
An early step in ES-0.2, "Natural Circulation Cooldown" requires the crew to verify that all CRDM fans are running. WHICH ONE of the following is the basis for this step?

A. To prevent overheating damage to the RPI coils and CRDM motor windings.
B. To remove heat from the reactor vessel head to prevent voiding in the vessel during depressurization.
C. To provide cooling for the core exit thermocouple extension leads to ensure reliable temperature indication.
D. To eliminate PTS concerns in the reactor vessel head during the RCS cooldown.

Proposed Answer:
B. To remove heat from the reactor vessel head to prevent voiding in the vessel during depressurization.

Explanation (Optional):
Answer A- CRDM Windings are not energized, RPI coils no hotter than normal, and cooling down
Answer B- Correct per procedure
Answer C- CETs do not require cooling for temperature compensation
Answer D- Head is not limiting component for PTS

Technical Reference(s): ES-0.2, "Natural Circulation Cooldown"

Proposed references to be provided to applicants during examination: None

Learning Objective: LIC-MCD-01 (1680), LIC-EOP-32 (5363)

Question Source:	Bank #	INPO- 10652 IP3 7/96
	Modified Bank #	______(Note changes or attach parent)
	New	______
Question History:	Last NRC Exam	IP3 7/96
Question Cognitive Level:	Memory or Fundamental Knowledge	X
	Comprehension or Analysis	______
10 CFR Part 55 Content:	55.41 X	
	55.43 ______	

Comments:
EA1. Ability to operate and / or monitor the following as they apply to the (Natural Circulation Cooldown) (CFR: 41.7 / 45.5 / 45.6)
EA1.2 Operating behavior characteristics of the facility.

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	1	
	K/A #	003 A3.03	
	Importance Rating	2.6	

Proposed Question:
The plant is in Mode 1 at 100% power with the folllowing indications and alarms:

- "RCP No.1 Seal Low D/P" annunciator in ALARM
- "RCP No.1 Seal Return High/Low Flow" annunciator in ALARM
- 32 RCP No. 1 Seal Differential Pressure.....150psid
- 32 RCP Seal Inlet Temperature.....150F
- 32 RCP Seal Outlet Temperature.....180F
- 32 RCP Seal Injection Flow.....6 gpm
- 32 RCP Standpipe Level Off Normal Light.....Not Lit
- 32 RCP Seal Return Recorder Indication.....6 gpm

What is the status of the 32 RCP Seal?

A. No.1 and No.2 RCP Seals have failed and full pressure drop is across No.3 RCP Seal
B. No.2 Seal has failed and full pressure drop is across No.1 and No.3 RCP Seals
C. No.1 Seal has failed and full pressure drop is across No.2 and No.3 RCP Seals
D. No.3 Seal has failed and full pressure drop is across No.1 and No.2 RCP Seals

Proposed Answer:
C. No.1 Seal has failed and full pressure drop is across No.2 and No.3 RCP Seals

Explanation (Optional):
A. Incorrect- Would require No. 1 Seal D/P to be >150psid and Standpipe in alarm
B. Incorrect- Would require No 1 Seal D/P to be >150psid
C. Correct- No. 1 Seal D/P Low and Leakoff flow high indicates a No.1 Seal Failure
D. Incorrect- Would require Standpipe level low.

Technical Reference(s): ONOP- RCS-5, SOP-RCS-1

Proposed references to be provided to applicants during examination: None

Learning Objective: LIC-NSS-3 Obj 2

Question Source: Bank # ______
Modified Bank # ______ (Note changes or attach parent)
New X

Question History: Last NRC Exam ______

Question Cognitive Level: Memory or Fundamental Knowledge ______
Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 X
55.43 ______

Comments:
A3 Ability to monitor automatic operation of the RCPS, including: (CFR: 41.7 / 45.5)
A3.03 Seal D/P

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	1	
	K/A #	004 K2.02	
	Importance Rating	3.1	

Proposed Question:
What are the power supplies for 31 and 32 Boric Acid Transfer Pumps?

A. 31- MCC 36B, 32- MCC 36A
B. 31- MCC 36C, 32- MCC 36D
C. 31- MCC 36A, 32- MCC 36B
D. 31- MCC 36D, 32- MCC 36C

Proposed Answer:
C. 31- MCC 36A, 32- MCC 36B

Explanation (Optional):
Answers A,B,D include wrong MCCs for the listed loads, All MCCs listed are in control building

Technical Reference(s): 480V Distribution System

Proposed references to be provided to applicants during examination: None

Learning Objective: LIC-PSA-01 Obj 4

Question Source: Bank # ______
Modified Bank # ______ (Note changes or attach parent)
New X

Question History: Last NRC Exam ______

Question Cognitive Level: Memory or Fundamental Knowledge X
Comprehension or Analysis ______

10 CFR Part 55 Content: 55.41 X
55.43 ______

Comments:
K2 Knowledge of bus power supplies to the following:
(CFR: 41.7)
K2.02 Makeup pumps

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	___
	Group #	1	___
	K/A #	004 K3.04	
	Importance Rating	3.9	

Proposed Question:
Indian Point 3 has just experienced a loss of all CVCS charging capability, while at power. The operating crew isolated CVCS letdown flow and has entered the appropriate Technical Specification action statements. What, if any, is the affect on the operation of Reactor Coolant Pumps (RCPs)?

A. The RCPs must be immediately tripped to prevent damage to the RCP seal packages from uncontrolled heatup.
B. RCP operation is allowed while restoring RCP Seal Injection, since Thermal Barrier Cooling is in service.
C. The RCPs must be immediately tripped to prevent damage to the RCP seal packages via contaminants from the RCS backflowing into the RCP Seals.
D. RCP operation is allowed to continue while restoring RCP Seal Injection even if Thermal Barrier Cooling is NOT in service.

Proposed Answer:
B. RCP operation is allowed while restoring RCP Seal Injection, since Thermal Barrier Cooling is in service.

Explanation (Optional):
Answer A is wrong, the RCPs do not immediately have to be tripped.
Answer B is correct per ONOP-RCS-5
Answer C is wrong, the RCPs do not immediately have to be tripped, however the reason is mentioned in the lesson plan as a negative outcome
Answer D is wrong, RCPs must be immediately tripped in this condition

Technical Reference(s): ONOP-RCS -5 "RCP Malfunctions"

Proposed references to be provided to applicants during examination: None

Learning Objective: LIC-ONP-31 Obj 2

Question Source: Bank # ___
Modified Bank # ___ (Note changes or attach parent)
New X

Question History: Last NRC Exam ___

Question Cognitive Level: Memory or Fundamental Knowledge ___
Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 X
55.43 ___

Comments:
K3 Knowledge of the effect that a loss or malfunction of the CVCS will have on the following:
(CFR: 41.7/45/6)
K3.04 RCPS

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	1	
	K/A #	005A4.01	
	Importance Rating	3.4	

Proposed Question:

Given the following:

- The Unit has tripped from 100% power due to a LOCA with a loss of offsite power.
- The Safety Injection (SI) Signal has been reset IAW E-1 "Loss of Reactor or Secondary Coolant"
- RCS pressure is 225 psig.
- RWST Level is 15ft.
- Emergency Diesel Generator 31 has started and successfully loaded
- Emergency Diesel Generator 32 has failed to start.
- No flow is indicated for 31 RHR Pump

WHICH ONE (1) of the following is the reason that 31 RHR Pump has no flow indication?

A. RCS pressure is above RHR pump shutoff head.
B. 480 V bus 3A has no power
C. SI termination requirements have been met, and 31 RHR Pump has been stopped
D. 31 RHR Pump has been stopped in accordance with ES-1.3 "Transfer To Cold Leg Recirculation"

Proposed Answer:
A. RCS pressure is above RHR pump shutoff head

Explanation (Optional):
A. Correct- Shutoff Head 160psid
B. Incorrect- 31 RHR Pump is powered from 31 EDG via 480V bus 3A
C. Incorrect- SI Termination Requirements are not met- RCS Pressure<1650psig
D. Incorrect- Requirements for Cold Leg Recirc not met- RWST Level> 11.5 feet

Technical Reference(s): ES-1.3 "Transfer To Cold Leg Recirculation", E-1 "Loss of Reactor or Secondary Coolant"

Proposed references to be provided to applicants during examination: None

Learning Objective: LIC-PSA-3 Obj 2

Question Source:
Bank # ______
Modified Bank # INPO-3033 2/96 Watts Bar(Changed Distractor "D". and SI Injection Signal and Electrical Conditions in Stem))
New ______

Question History: Last NRC Exam 2/96 Watts Bar

Question Cognitive Level:
Memory or Fundamental Knowledge ______
Comprehension or Analysis X

10 CFR Part 55 Content:
55.41 X
55.43 ______

Comments:
A4 Ability to manually operate and/or monitor in the control room: (CFR: 41.7 / 45.5 to 45.8)
A4.01 Controls and Indication for RHR Pumps

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	____	2
	Group #	____	1
	K/A #	005 2.2.5	
	Importance Rating	2.7	

Proposed Question:
It has been determined that due to a problem with a temperature probe on the outlet of 31 Residual Heat Removal Heat Exchanger, a Temporary Modification is required to ensure that RHR HX Temperature Recorder TR-636 receives a valid input from 31 RHR Heat Exchanger outlet temperature. As you review the package that is to be installed on your shift, you note the following:

- The plant is at 100% power, 50 days before a refueling outage.
- A strap on thermocouple will be taking the place of the installed RTD.
- The instrumentation will be powered from a supply in the vicinity of 31 RHR Heat Exchanger that is safety related and from that train.
- The cart that is holding the equipment has been seimically restrained.
- The Modification package has a removal date of 60 days
- A Temp Mod Tag has been prepared for hanging on the required equipment.
- The electrical connection at the recorder will be accomplished by lifting and taping the leads from the RTD and landing similar leads from the Thermocouple output.

Which statement is correct concerning this plant modification?
A. This modification meets the requirements as a Temporary Modification and should be approved and installed.
B. The Temporary Modification procedure is NOT required in this instance and this package should not be approved for installation.
C. The proposed installation period is too long, the package should not be approved since it will be installed for 60 days or more.
D. The proposed Temporary Modification should not be installed because taping of lifted leads is not authorized in the RHR Heat Exchanger room.

Proposed Answer:
A. This modification meets the requirements as a Temporary Modification and should be approved and installed.

Explanation (Optional):

Technical Reference(s): ENN-DC-136 "Temporary Alterations"
Proposed references to be provided to applicants during examination: None
Learning Objective: ____________
Question Source: Bank # ______
Modified Bank # ______(Note changes or attach parent)
New X

Question History: Last NRC Exam N/A
Question Cognitive Level: Memory or Fundamental Knowledge X
Comprehension or Analysis ____
10 CFR Part 55 Content: 55.41 ____
55.43 X

Comments:
2.2.5 **Knowledge of the process for making changes in the facility as described in the safety analysis report.**
(CFR: 43.3 / 45.13)

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	___
	Group #	1	___
	K/A #	006 A3.01	
	Importance Rating	4.3	

Proposed Question:
The following plant conditions exist:

- Plant is in Mode 4
- RCS Temp- 210 degrees F
- RCS Press- 375 psig

Maintenance is being performed on the containment pressure detectors when an inadvertent SI signal is received by the ECCS circuitry. Which of the following describes the response of the ECCS Accumulators to the inadvertent SI under the given plant conditions?

The accumulators will:
A. discharge into the RCS because the accumulator outlet MOVs (valves 894 A, B. C, & D) will open on the SI signal.
B. discharge into the RCS because the accumulator outlet MOVs (valves 894 A, B. C, & D) are open and the accumulators pressurize with Nitrogen as a result of the SI signal.
C. not discharge into the RCS because the accumulator outlet MOVs (valves 894 A. B. C, & D) are closed with their power supply locked out.
D. not discharge into the RCS because accumulator pressure is lower than RCS pressure.

Proposed Answer:
C. not discharge into the RCS because the accumulator outlet MOVs (valves 894 A. B. C, & D) are closed with their power supply locked out.

Explanation (Optional):
A. Incorrect- No Discharge Into RCS
B. Incorrect- No Discharge Into RCS
C. Correct- In Mode 4 Accumulators are locked out
D. Incorrect- Wrong reason, and accumulators are not required to be operable.

Technical Reference(s): POP 3.3 " Plant Cooldown- Hot to Cold Shutdown"

Proposed references to be provided to applicants during examination: None

Learning Objective: LIC-POP 4 Obj 2

Question Source:	Bank #	INPO-10479 IP3 4/96
	Modified Bank #	_______(Note changes or attach parent)
	New	_______
Question History:	Last NRC Exam	IP3 4/96

Question Cognitive Level:		
	Memory or Fundamental Knowledge	___
	Comprehension or Analysis	X

10 CFR Part 55 Content:		
	55.41	X
	55.43	___

Comments:
A3 Ability to monitor automatic operation of the ECCS, including: (CFR: 41.7 / 45.5)
A3.01 Accumulators

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	1	
	K/A #	007 K1.03	
	Importance Rating	3.2	

Proposed Question:
Given the following conditions:

- Pressurizer Relief Tank (PRT) level is 68%.
- PRT pressure is 3 psig.
- RCS pressure is 2255 psig.
- One pressurizer PORV is leaking by the seat.

WHICH ONE of the following describes the expected downstream tailpipe condition?
A. Saturated steam-water mixture at 200 degrees F.
B. Superheated steam at 313 degrees F.
C. Superheated steam at 635 degrees F.
D. Saturated steam-water mixture at 220 degrees F.

Proposed Answer:
D. Saturated steam-water mixture at 220 degrees F.

Explanation (Optional):
A. Incorrect- Wrong place on Mollier Diagram
B. Incorrect- Not Superheated
C. Incorrect- Not Superheated
D. Correct- Approx Enthalpy 1115 BTU/lbm, constant enthalpy process

Technical Reference(s): Mollier Diagram

Proposed references to be provided to applicants during examination: Mollier Diagram

Learning Objective: LIC-ONP-51 Obj 1

Question Source:		
	Bank #	INPO- 10712 and 20583
	Modified Bank #	_______(Note changes or attach parent)
	New	_______

Question History: Last NRC Exam IP3 7/96 and Point Beach 1 2/02

Question Cognitive Level:		
	Memory or Fundamental Knowledge	
	Comprehension or Analysis	X

10 CFR Part 55 Content:		
	55.41	X
	55.43	

Comments:
K1 Knowledge of the physical connections and/or cause effect relationships between the PRTS and the following systems:
(CFR: 41.2 to 41.9 / 45.7 to 45.8)
K1.03 RCS

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	1	
	K/A #	008K4.01	
	Importance Rating	3.3	

Proposed Question:
The following plant conditions exist:

- The plant is in Mode 1 at 80% power
- 31 and 33 CCW pumps are in service
- 32 CCW pump is in standby
- A leak has developed on the discharge of 31 CCW pump

What is the highest CCW header pressure for which the standby CCW pump will automatically start?

A. 110 psig
B. 100 psig
C. 90 psig
D. 80 psig

Proposed Answer:
B. 100 psig

Explanation (Optional):
The standby CCW pump starts at 100 psig lowering

Technical Reference(s): SOP-CC-001B, ONOP-CC-1

Proposed references to be provided to applicants during examination: None

Learning Objective: LIC-PSA-2 Obj 4

Question Source: Bank # ____
Modified Bank # ____ (Note changes or attach parent)
New X

Question History: Last NRC Exam ____

Question Cognitive Level: Memory or Fundamental Knowledge X
Comprehension or Analysis ____

10 CFR Part 55 Content: 55.41 X
55.43 ____

Comments:
K4 Knowledge of CCWS design feature(s) and/or interlock(s) which provide for the following:
(CFR: 41.7)
K4.01 Automatic Start of Standby Pump

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	1	
	K/A #	010K2.02	
	Importance Rating	2.7	

Proposed Question:

The following plant conditions exist:

- The plant is in Mode 1 at 75% power
- A Loss of 32 Instrument Bus (Channel 1, Red) has just occurred
- ONOP-EL-3 "Loss of an Instrument Bus" has been implemented
- The Pressurizer Master Pressure Controller was taken to Manual per the Initial Operator Actions

When can the Pressurizer Master Pressure Controller be returned to Automatic?

A. When 32 Instrument Bus is restored, since power was lost to the Pressurizer Master Pressure Controller.

B. As a part of contingency actions of the procedure, since Instrument power was not lost to the Pressurizer Master Pressure Controller.

C. When 32 Instrument Bus is restored, since power was lost to the Pressurizer Spray Valve Controllers.

D. When 32 Instrument Bus is restored, since power was lost to the Pressurizer Heater Controller.

Proposed Answer:

B. As a part of contingency actions of the procedure, since Instrument power was not lost to the Pressurizer Master Pressure Controller.

Explanation (Optional):

Power is not lost to any Pressurizer controls for the loss of 32 Instrument Bus

Technical Reference(s): ONOP-EL-3 "Loss of an Instrument Bus

Proposed references to be provided to applicants during examination: None

Learning Objective: LIC-ONP- 2 Obj 3

Question Source:
Bank # ______
Modified Bank # ______(Note changes or attach parent)
New X

Question History: Last NRC Exam ______

Question Cognitive Level:
Memory or Fundamental Knowledge ______
Comprehension or Analysis X

10 CFR Part 55 Content:
55.41 X
55.43 ______

Comments:

K2 Knowledge of bus power supplies to the following:

(CFR: 41.7)

K2.02 Controller for PZR spray valve

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	1	
	K/A #	010A3.02	
	Importance Rating	3.5	

Proposed Question:
Given the following conditions:

- Reactor is at 100% power.
- Pressurizer Pressure Channel 1 is the controlling channel.
- Pressurizer Pressure controls are in AUTO.
- All Pressurizer Pressure channels are operable.
- All Pressurizer control components are operable.

WHICH ONE of the following describes the final result if Channel 1 pressurizer pressure detector (PT-455) fails LOW under these conditions, and NO operator action is taken?

A. PORV PCV-456 will maintain RCS pressure 90 to 100 psig above normal.
B. No effect on RCS pressure because the Master Pressure Controller will select the non-failed channel.
C. Backup heaters will maintain RCS pressure 35 to 50 psig below normal.
D. A High Pressurizer Pressure Reactor Trip will occur, since pressure rises and PORVs will not open.

Proposed Answer:
A. PORV PCV-456 will maintain RCS pressure 90 to 100 psig above normal.

Explanation (Optional):
A. Correct- PCV- 456 is independent from the Master Pressure Controller and will maintain pressure 2325-2335 psig.
B. Incorrect- Spray Valve actuation is controlled by the Pressurizer Pressure Controller which thinks pressure is low due to the failure
C. Incorrect- Backup heaters will be on, however actual plant pressure will continue to rise above the control band
D. Incorrect-PCV-456 will operate to prevent a High Pressure Reactor Trip

Technical Reference(s): LIC-IXC-11

Proposed references to be provided to applicants during examination: None

Learning Objective: LIC-IXC-11 Obj 5

Question Source: Bank # INPO 10645 IP3 7/96
Modified Bank # ______(Note changes or attach parent)
New ______

Question History: Last NRC Exam IP3 7/96

Question Cognitive Level: Memory or Fundamental Knowledge ______
Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 X
55.43 ______

Comments:
A3 Ability to monitor automatic operation of the PZR PCS, including: (CFR: 41.7 / 45.5)
A3.02 Pzr Pressure

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	1	
	K/A #	012K1.01	
	Importance Rating	3.7	

Proposed Question:
During a startup, with the reactor critical at 1E-8 amps. the breaker from the No. 31 static inverter supply to instrument bus No. 31 trips open. The transfer to the back-up power supply fails, and power is lost to the 120 VAC instrument bus No. 31.

The result of the above will be:
A. A reactor trip due to the de-energization of Intermediate Range channel N35.
B. A source range high flux reactor trip due to the de-energization of permissive P-6.
C. A reactor trip due to the de-energization of Intermediate Range channel N36.
D. The de-energization of several nuclear instrument channels, with no effect on nuclear power.

Proposed Answer:
C. A reactor trip due to the de-energization of Intermediate Range channel N36.

Explanation (Optional):
A. Incorrect- N-35 does not de-energize
B. Incorrect- P-6 does not de-energize
C. Correct- in 1 of 2 logic while in IR, loss of power causes trip RPS channel
D. Incorrect- Trip does occur

Technical Reference(s): ONOP-EL-3 "Loss of an Instrument Bus

Proposed references to be provided to applicants during examination: None

Learning Objective: LIC-IXC-13 Obj 4

Question Source: Bank # INPO-10499 IP3 4/96
Modified Bank # _______(Note changes or attach parent)
New _______

Question History: Last NRC Exam IP3 4/96

Question Cognitive Level: Memory or Fundamental Knowledge _____
Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 X
55.43 _____

Comments:
K1 Knowledge of the physical connections and/or cause effect relationships between the RPS and the following systems:
(CFR: 41.2 to 41.9 / 45.7 to 45.8)
K1.01 120V vital/instrument power system

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	____
	Group #	1	____
	K/A #	012 K4.07	
	Importance Rating	3.2	

Proposed Question:
The plant is operating at 70% power when the breaker supplying 32 RCP trips. Which statement below correctly describes the condition of the "Reactor Trip First Out Alarm Panel" Panel FDF?

A. "Loss of Flow Single Loop" annunciator will be flashing, and will go solid when acknowledged.
B. " Reactor Trip Breaker Open" annunciator will be flashing, and will go solid when acknowledged.
C. "Loss of Flow Single Loop" annunciator will be solid, and will begin flashing when acknowledged.
D. " Reactor Trip Breaker Open" annunciator will be solid, and will begin flashing when acknowledged.

Proposed Answer:
A. "Loss of Flow Single Loop" annunciator will be flashing, and will go solid when acknowledged.

Explanation (Optional):
A. Correct- This condition will be sensed first- First Out flashes until acknowledged, then goes solid
B. Incorrect- This condition will not be the "first out"
C. Incorrect- First Out flashes until acknowledged, then goes solid
D. Incorrect- This is not "first out", and would be shown as solid and stays solid

Technical Reference(s): ARP-002 "Panel FDF- Reactor Trip First Out"

Proposed references to be provided to applicants during examination: None

Learning Objective: LIC-IXC-13 Obj 1

Question Source:
Bank # ____
Modified Bank # ____ (Note changes or attach parent)
New X

Question History: Last NRC Exam ____

Question Cognitive Level:
Memory or Fundamental Knowledge ____
Comprehension or Analysis X

10 CFR Part 55 Content:
55.41 X
55.43 ____

Comments:
K4 Knowledge of RPS design feature(s) and/or interlock(s) which provide for the following:
(CFR: 41.7)
K4.07 First-out indication

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	1	
	K/A #	013K5.01	
	Importance Rating	3.2	

Proposed Question:

Given the following:

- An automatic safety injection occurred following a steam break outside containment.
- The steam break has been isolated.
- RCS pressure has been restored to 2200 psig.
- Main steamline pressures have been restored to 1000 psig.
- ESF Busses are all energized.
- Reactor Trip Breaker "A" opened by SI actuation.
- Reactor Trip Breaker "B" is closed, never opened.
- Both trains of Safety Injection have been RESET, using the Key Switches.
- SI flow has been terminated.

WHICH ONE (1) of the following describes the response of the SI and RHR pumps when RCS pressure rapidly decreases to 1500 psig?

A. ECCS pumps will NOT start in either Train "A" or Train "B".
B. ECCS pumps will start in both Train "A" and Train "B".
C. Train "A" ECCS pumps will start; Train "B" ECCS pumps will NOT start.
D. Train "B" ECCS pumps will start; Train "A" ECCS pumps will NOT start.

Proposed Answer:

A. ECCS pumps will NOT start in either Train "A" or Train "B".

Explanation (Optional):

To RESET SI in this condition, SI defeat switches are placed in Block such that an SI will not reinitiate.

Technical Reference(s): Westinghouse Technology Systems Manual

Proposed references to be provided to applicants during examination: ______

Learning Objective: LIC-ESS-1 Obj 1

Question Source:	Bank #	INPO- 5365 Salem 1 7/96
	Modified Bank #	______(Note changes or attach parent)
	New	______
Question History:	Last NRC Exam	Salem 1 7/96
Question Cognitive Level:	Memory or Fundamental Knowledge	______
	Comprehension or Analysis	X
10 CFR Part 55 Content:	55.41	X
	55.43	______

Comments:

K5 Knowledge of the operational implications of the following concepts as they apply to the ESFAS: (CFR: 41.5 / 45.7)

K5.01 Definitions of safety train and ESF channel

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	1	
	K/A #	022 K2.01	
	Importance Rating	3.1	

Proposed Question:

The plant has experienced a Design Basis Loss of Coolant Accident. Containment Cooling has initiated, and both Containment Spray Pumps and all Fan Cooler Units have started and are running. An electrical fault causes the loss of 480V Bus 5A. How does this impact the design cooling capability of the Containment Cooling Systems?

Containment Cooling......

A. IS NOT adequate since 1 Containment Spray Pump and 3 Fan Cooling Units are in operation.

B. IS NOT adequate since 1 Containment Spray Pump and 4 Fan Cooling Units are in operation.

C. IS adequate since BOTH Containment Spray Pumps and 4 Fan Cooling Units are in operation.

D. IS adequate since 1 Containment Spray Pump and 3 Fan Cooling Units are in operation.

Proposed Answer:

D. IS adequate since 1 Containment Spray Pump and 3 Fan Cooling Units are in operation.

Explanation (Optional):

A. Incorrect- This configuration is adequate for containment cooling by design

B. Incorrect- Only 3 FCUs are operating

C. Incorrect- Only 1 CS pump is operating

D. Correct- With bus 5A OOS only 1 CS Pump and 3 FCUs are operating, and this is adequate by design

Technical Reference(s): Westinghouse Technology Course, and LIC-ESS-3 and 4

Proposed references to be provided to applicants during examination: None

Learning Objective: LIC-ESS-4 Obj 3

Question Source: Bank # ______

Modified Bank # ______(Note changes or attach parent)

New X

Question History: Last NRC Exam ______

Question Cognitive Level: Memory or Fundamental Knowledge ______

Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 X

55.43 ______

Comments:

K2 Knowledge of power supplies to the following:

(CFR: 41.7)

K2.01 Containment cooling fans

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	1	
	K/A #	026K4.06	
	Importance Rating	2.9	

Proposed Question:

Given the following plant conditions:

- The plant was at 100% power
- A design basis LOCA occurred
- The operator notes, several minutes after Containment Spray initiation that Spray additive tank flow indicates "0", and that Containment Spray Additive Tank Level is not lowering.

Which ONE (1) of the following describes the effect of this failure?

A. Radioactive Cesium will NOT be as effectively removed and held in solution since there will be a lack of elemental Sodium (Na) in the Containment Spray Solution.

B. Radioactive Cesium will be effectively removed and the lower pH from the lack of NaOH in the Containment Spray Solution will cause increased corrosion rates.

C. Radioactive Iodine will NOT be as effectively removed and held in solution since spray solution pH will be too low.

D. Radioactive Iodine will be effectively removed and the lower pH from lack of NaOH in the Containment Spray Solution will cause increased corrosion rates.

Proposed Answer:

C. Radioactive iodine will NOT be as effectively removed and held in solution since spray solution pH will be too low.

Explanation (Optional):

A. Incorrect- Na has no effect on removal of Iodineor Cesium, Containment Spray is not credited for Cesium removal

B. Incorrect- Containment Spray is not credited for Cesium removal

C. Correct- Removal of Iodine is ph dependent

D. Incorrect- Iodine removal is enhanced by presence of NaOH in solution to lower pH.

Technical Reference(s): FSAR Chap 14 and LIC-ESS- 03

Proposed references to be provided to applicants during examination: None

Learning Objective: LIC-ESS-3 Obj 3

Question Source: Bank # ______

Modified Bank # INPO-5185 Robinson- 8/96 (Changed Stem for spray add delay, and changed all distractors

New ______

Question History: Last NRC Exam Robinson 8/96

Question Cognitive Level: Memory or Fundamental Knowledge ______

Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 X

55.43 ______

Comments:

K4 Knowledge of CSS Design Features and/or Interlocks which provide for the following:

(CFR: 41.7) K4.06 Iodine Scavenging via the CS System

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	1	
	K/A #	026A2.08	
	Importance Rating	3.7	

Proposed Question:

Given the following:

The crew has just entered EOP E-1, "Loss of Reactor or Secondary Coolant." Containment Spray is currently reducing containment pressure. Containment readings are as follows:

- Containment Temperature- 230 degrees F and lowering
- Containment Pressure Chart Recorder- Pressure peaked at 24 psig. Currently pressure is 19 psig and lowering
- Containment Spray Pumps- Both Operating Normally
- Fan Cooling Units- 3 In Service

WHICH ONE (1) of the following is the HIGHEST pressure below which containment spray may be secured per EOP E-1, "Loss of Reactor or Secondary Coolant"?

A. 22.0 psig

B. Conditions currently met

C. 16.0 psig

D. 3.0 psig

Proposed Answer:

C. 16.0 psig

Explanation (Optional):

A. Incorrect- 22 psig is Containment Spray Initiation Setpoint

B. Incorrect- Pressure needs to be <16 psig or 5 FCUs running

C. Correct- Meets required conditions

D. Incorrect- 3.0 psig is Phase A setpoint on many Westinghouse plants

Technical Reference(s): E-1, "Loss of Reactor or Secondary Coolant

Proposed references to be provided to applicants during examination: None

Learning Objective: LIC-EOP-33 Obj V

Question Source: Bank # ____

Modified Bank # INPO-6198 Diablo Canyon 4/98 (Changed stem to use containment atmosphere parameters, Changed all distractors and answer

New ____

Question History: Last NRC Exam Diablo Canyon 4/98

Question Cognitive Level: Memory or Fundamental Knowledge ____

Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 __X___
55.43 _____

Comments:

A2 Ability to (a) predict the impacts of the following malfunctions or operations on the CSS; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations:

(CFR: 41.5 / 43.5 / 45.3 / 45.13)

A2.08 Safe securing of containment spray when it can be done .

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	1	
	K/A #	039 2.2.2	
	Importance Rating	3.5	

Proposed Question:

The plant is conducting a start up per POP 1.3 "Plant Startup From Zero to 45% Power". SOP-MS-001 "Main and Reheat Steam System" is being utilized to warm up the Main Steam system. Which of the following is the correct sequence of events when warming up the Main Steam System during plant startup?

A. Open MSIV Bypass Valves, Achieve 100 psid Across MSIVs, Close MSIV Bypass Valves, Open MSIVs.

B. Open MSIV Bypass Valves, Achieve 50 psid Across MSIVs, Close MSIV Bypass Valves, Open MSIVs.

C. Open MSIV Bypass Valves, Achieve 100 psid Across MSIVs, Open MSIVs, Close MSIV Bypass Valves.

D. Open MSIV Bypass Valves, Achieve 50 psid Across MSIVs, Open MSIVs, Close MSIV Bypass Valves.

Proposed Answer:

D. Open MSIV Bypass Valves, Achieve 50 psid Across MSIVs, Open MSIVs, Close MSIV Bypass Valves.

Explanation (Optional):

Correct D/P across MSIVs per SOP-MS-001 is 50psid, and Bypasses are opened, MSIVs are then opened, and Bypasses are shut.

Technical Reference(s): SOP-MS-001 "Main and Reheat Steam System"

Proposed references to be provided to applicants during examination: None

Learning Objective: LIC-POP-11 Obj 3 , LIC-SPC-1 Obj 7

Question Source:	Bank #	
	Modified Bank #	(Note changes or attach parent)
	New	X
Question History:	Last NRC Exam	N/A

Question Cognitive Level:	Memory or Fundamental Knowledge	
	Comprehension or Analysis	X
10 CFR Part 55 Content:	55.41 X	
	55.43	

Comments:

2.2.2 **Ability to manipulate the console controls as required to operate the facility between shutdown and designated power levels.** (CFR: 45.2)

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	____	2
	Group #	____	1
	K/A #	056 2.4.47	
	Importance Rating	3.7	

Proposed Question:

The following conditions and alarms exist with the plant at 100% power:

- Steam Generator Levels In All 4 S/Gs are showing a lowering trend.
- All Feedwater Regulating Valves have opened beyond normal steady state positions.
- All 4 S/Gs are showing a Steam Flow/ Feed Flow Mismatch.
- All 4 S/G Feedwater Flows are lowering.
- MBFP Suction Pressure lowered to 315psig, and is oscillating between 315 psig and 400psig.
- "6900 V Motor Trip (Common)" Annunciator is in alarm on Panel SHF

What is the diagnosed problem and required recovery action for the stated conditions?

A. A Condensate Pump has tripped and an immediate power reduction is necessary per ONOP-FW-001 "Loss of Feedwater".

B. A Condensate Pump has tripped and a reactor trip is required per ONOP-FW-001 "Loss of Feedwater".

C. A Heater DrainTank Pump has tripped and an immediate power reduction is necessary per ONOP-FW-001 "Loss of Feedwater".

D. A Heater Drain Tank Pump has tripped and a reactor trip is required per ONOP-FW-001 "Loss of Feedwater".

Proposed Answer:

A. A Condensate Pump has tripped and an immediate power reduction is necessary per ONOP-FW-001 "Loss of Feedwater".

Explanation (Optional):

Indications are indicative of a condensate pump trip since levels are degrading. The low feed pump suction controller lowers speed to raise suction pressure, and then the pump speeds up as a result of lowering S/G Levels in an oscillating fashion. A loss of a Heater Drain Pump will not cause MBFP suction pressure to go <350psig.

Technical Reference(s): ONOP-FW-001 "Loss of Feedwater"

Proposed references to be provided to applicants during examination: ARP-011 Panel SHF- "Electrical" page 2

Learning Objective: LIC-SPC-4 Obj 6

Question Source:

Bank #	______	
Modified Bank #	______	(Note changes or attach parent)
New	X	

Question History: Last NRC Exam N/A

Question Cognitive Level: Memory or Fundamental Knowledge ____
Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 ____
55.43 X

Comments:

2.4.47 **Ability to diagnose and recognize trends in an accurate and timely manner utilizing the appropriate control room reference material.**

(CFR: 41.10,43.5 / 45.12)

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	1	
	K/A #	059 A3.04	
	Importance Rating	2.6	

Proposed Question:

Given the following plant conditions:

- The plant is operating at 80% power.
- Both main boiler feed pumps (MBFPs) are in AUTO.
- The "MBFP No. 31 & 32 SPEED CONTROL TROUBLE" annunciator has just alarmed.
- The "% Feedwater" display is blank.
- The "Failure Hold" light is illuminated.
- The "% Hold" display indicates 77%.

Under these conditions, what action is CAUTIONED against by operating procedure ONOP-FW-1. "Loss of Feedwater"?.

A. Placing the MBFP Foxboro speed controller in manual to control speed.

B. Immediately depressing "Track and Hold Reset" to transfer MBFP speed control to the Foxboro speed controller.

C. Allowing the track and hold circuitry to maintain control of MBFP speed.

D. Controlling MBFP speed locally at the Lovejoy Control Panel.

Proposed Answer:

B. Immediately depressing "Track and Hold Reset" to transfer MBFP speed control to the Foxboro speed controller.

Explanation (Optional):

Actions A,C, and D are not cautioned against in ONOP-FW-0001, Action B is cautioned against in ONOP-FW-001

Technical Reference(s): ONOP-FW-001 "Loss of Feedwater

Proposed references to be provided to applicants during examination: None

Learning Objective: LIC-ONP-4 Obj 5

Question Source:	Bank #	INPO- 10538 IP3 4/96	
	Modified Bank #	_______(Note changes or attach parent)	
	New		
Question History:	Last NRC Exam	IP3 4/96	
Question Cognitive Level:	Memory or Fundamental Knowledge		X
	Comprehension or Analysis		
10 CFR Part 55 Content:	55.41 X		
	55.43		

Comments:

A3 Ability to monitor automatic operation of the MFW, including:

(CFR: 41.7 / 45.5)

A3.04 Turbine driven feed pump

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	1	
	K/A #	061K3.01	
	Importance Rating	4.6	

Proposed Question:

The plant has experienced a Loss of Main and Auxiliary Feedwater. FR-H.1 " Response To Loss of Secondary Heat Sink" procedure has been implemented. FR-H.1 contains a caution statement that ensures that the "bleed and feed" process is promptly initiated when the appropriate criteria are met.

What is the basis for starting bleed and feed "without delay" when the criteria are met?

A. Steam generator dryout cannot be observed, therefore action must be taken at an observable SG level.

B. This ensures some water left in the S/Gs so that thermal stress is reduced on a later initiation of main or auxiliary feedwater.

C. The ability to cool the core using SI flow may become unavailable due to rising RCS Pressure.

D. Core uncovery will begin a few minutes after bleed and feed initiation criteria occurs.

Proposed Answer:

C. The ability to cool the core using SI flow may become unavailable due to rising RCS Pressure.

Explanation (Optional):

Answer C is the basis for the bleed and feed process per WCAP.

Technical Reference(s): FR-H.1 " Response To Loss of Secondary Heat Sink"

Proposed references to be provided to applicants during examination: None

Learning Objective: LIC-EOP-39 Obj K

Question Source: Bank # INPO-6091 DC Cook 1/96
Modified Bank # ______ (Note changes or attach parent)
New ______

Question History: Last NRC Exam DC Cook 1/96

Question Cognitive Level: Memory or Fundamental Knowledge X
Comprehension or Analysis ______

10 CFR Part 55 Content: 55.41 X
55.43 ______

Comments:

K3 Knowledge of the effect that a loss or malfunction of the AFW will have on the following:

(CFR: 41.7 / 45.6)

K3.01 RCS

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	1	
	K/A #	061A1.01	
	Importance Rating	4.2	

Proposed Question:

The plant is operating at 100% power at steady state when the following conditions are encountered:

- 480 V Bus 6A is lost due to an electrical fault
- 34 S/G Feedwater Regulating Valve positions to 50% open due to an internal control problem

What will be the impact on the Auxiliary Feedwater System as a result of these conditions (Assume no operator action)?

A. 31 ABFP starts on Low Low Steam Generator Level at 12% in 34 S/G, Aux Feed is supplied to 33 and 34 S/Gs.

B. 31 ABFP starts on Low Low Steam Generator Level at 8% in 34 S/G, Aux Feed is supplied to 31 and 32 S/Gs.

C. 33 ABFP starts on Low Low Steam Generator Level at 8%in 34 S/G, Aux Feed is supplied to 31 and 32 S/Gs.

D. 33 ABFP starts on Low Low Steam Generator Level at 12% in 34S/G, Aux Feed is supplied to 33 and 34 S/Gs.

Proposed Answer:

B. 31 ABFP starts on Low Low Steam Generator Level at 8% in 34 S/G, Aux Feed is supplied to 31 and 32 S/Gs.

Explanation (Optional):

Electric Driven ABFPs are 31 and 33. 31 is powered from 3A 480V Bus, 33is powered from 6A 480V Bus. 31 injects to 31 and 32 S/Gs, 33 injects to 33 and 34 S/Gs. Electric pumps start on 2 of 3 detectors on 1 of 4 S/Gs at 8% S/G level. Only B Answer is correct.

Technical Reference(s): LIC-SPC-9

roposed references to be provided to applicants during examination: None

Learning Objective: LIC-SPC-9 Obj 1 and 4

Question Source:	Bank #		
	Modified Bank #		(Note changes or attach parent)
	New	X	
Question History:	Last NRC Exam		
Question Cognitive Level:	Memory or Fundamental Knowledge		
	Comprehension or Analysis	X	
10 CFR Part 55 Content:	55.41	X	
	55.43		

Comments:

A1 Ability to predict and/or monitor changes in parameters

(to prevent exceeding design limits) associated with operating the AFW controls including: (CFR: 41.5 / 45.5)

A1.01 S/G level

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	1	
	K/A #	062K1.02	
	Importance Rating	4.4	

Proposed Question:

Which of the following conditions would result in the starting and loading of the 33 Emergency Diesel Generator onto the 5A 480V Bus?

A. A Loss of Coolant Accident has caused a Safety Injection Actuation.

B. The 5A 480V Bus has it's voltage drop to 85% of Normal Voltage for 40 seconds.

C. The 5A 480V Bus has a rapid drop in bus voltage to 40% of Normal voltage.

D. The 5A 480V Bus has its Normal Feeder Breaker open on overcurrent.

Proposed Answer:

C. The 5A 480V Bus has a rapid drop in bus voltage to 40% of Normal voltage.

Explanation (Optional):

A. SI Signal only starts diesel, no loading

B. Degraded Bus Voltage relay picks up at 80% of normal bus voltage for 40 seconds

C. The instantaneous voltage relay picks up at 46% of normal bus voltage

D. Overcurrent condition will lock the bus out. Diesel will not load.

Technical Reference(s): LIC-EDS-11

Proposed references to be provided to applicants during examination: None

Learning Objective: LIC-EDS-11 Obj 4

Question Source: Bank # ____
Modified Bank # ____ (Note changes or attach parent)
New X

Question History: Last NRC Exam N/A

Question Cognitive Level: Memory or Fundamental Knowledge ____
Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 X
55.43 ____

Comments:

K1 Knowledge of the physical connections and/or cause effect relationships between the ac distribution system and the following systems:

(CFR: 41.2 to 41.9)

K1.02 ED/G

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	____	2
	Group #	____	1
	K/A #	062A2.05	
	Importance Rating		3.3

Proposed Question:

Given the following plant conditions:

- RCS Temperature- 450 degrees F
- RCS Pressure- 1400 psig
- An RCS Cooldown is in progress
- A Loss of All Offsite Power has just occurred.
- No 480V AC Buses are Energized
- No Emergency Diesel Generators Are Running

Based on these conditions, what procedure must be entered and what actions must be taken?

A. Enter ECA- 0.0, "Loss of All AC Power", Place listed Engineered Safeguards equipment control switches in Trip/Pullout/Off to prevent an uncontrolled start of large loads on Safeguards AC Buses.

B. Enter ECA- 0.0, Loss of All AC Power", Place listed Engineered Safeguards equipment control switches in Trip/Pullout/Off, to prevent an uncontrolled cooldown of the Reactor Coolant System.

C. Enter ONOP-EL-4, "Loss of Offsite Power", Place listed Engineered Safeguards equipment control switches in Trip/Pullout/Off to prevent an uncontrolled start of large loads on Safeguards AC Buses.

D. Enter ONOP-EL-4, "Loss of Offsite Power", Place listed Engineered Safeguards equipment control switches in Trip/Pullout/Off, to prevent an uncontrolled cooldown of the Reactor Coolant System.

Proposed Answer:

A. Enter ECA- 0.0, "Loss of All AC Power", Place listed Engineered Safeguards equipment control switches in Trip/Pullout/Off to prevent an uncontrolled start of large loads on Safeguards AC Buses.

Explanation (Optional):

Answer A is correct per WOG Basis Document for ECA 0.0, Mode 3 Conditions require use of EOPs

Technical Reference(s): ECA-00 " Loss of All AC Power

Proposed references to be provided to applicants during examination: None

Learning Objective: LIC-EOP-04 (0241)

Question Source: Bank # INPO- 2814 Point Beach 8/99
Modified Bank # ________(Note changes or attach parent)
New ________

Question History: Last NRC Exam Point Beach 8/99

Question Cognitive Level: Memory or Fundamental Knowledge ______

Comprehension or Analysis ___X___

10 CFR Part 55 Content: 55.41 ______
55.43 ___X___

Comments:

A2 Ability to (a) predict the impacts of the following malfunctions or operations on the ac distribution system; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations:

(CFR: 41.5 / 43.5 / 45.3 / 45.13)

A2.05 Methods for energizing a dead bus

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	1	
	K/A #	063K2.01	
	Importance Rating	4.4	

Proposed Question:

125 Volt DC Bus 32 has been lost due to a fault on the bus. Channel A Pressurizer Level Bistables are in the tripped condition for an I/C Surveillance. All other equipment has functioned as expected. What is the effect on continued plant operation?

A. A Reactor Trip occurs due to an shunt trip condition on the "A" reactor trip breaker.

B. A Reactor Trip occurs due to an undervoltage condition on the "A" reactor trip breaker.

C. A Reactor Trip occurs due to 2 of 4 logic met for High Pressurizer Level Trip.

D. No Immediate Reactor Trip occurs, however a 2 Hour Shutdown T.S LCO is entered.

Proposed Answer:

B. A Reactor Trip occurs due to an undervoltage condition on the "A" reactor trip breaker.

Explanation (Optional):

RTB and BYPA are powered from DC Bus 31, RTA and BYPB are powered from DC Bus 32, The associated vital AC bus is not lost as the inverter completes a rapid transfer to alternate AC source.

Technical Reference(s): None

Proposed references to be provided to applicants during examination: None

Learning Objective: LIC-EDS-7 Obj 5

Question Source: Bank # _____
Modified Bank # _____ (Note changes or attach parent)
New X

Question History: Last NRC Exam N/A

Question Cognitive Level: Memory or Fundamental Knowledge _____
Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 X
55.43 _____

Comments:

K2 Knowledge of bus power supplies to the following:

(CFR: 41.7)

K2.01 Major DC loads

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	1	
	K/A #	063A1.01	
	Importance Rating	3.3	

Proposed Question:

Given the following plant conditions:

- A Station Blackout has occurred.
- 31,32,33,and 34 125 Volt Batteries are discharging at their design rate.
- Restoration of AC Electrical Power is not expected for 6 hours.
- Required Emergency Operating Procedure actions have been completed.

By design, how long are the Station Batteries expected to last?

A. 1 Hour

B. 2 Hours

C. 3 Hours

D. 4 Hours

Proposed Answer:

B. 2 Hours

Explanation (Optional):

Answer of 2 hours is given in the IP3 FSAR Chapter 8 Table 8.2-2

Technical Reference(s): IP3 FSAR Chapter 8 Table 8.2-2

Proposed references to be provided to applicants during examination: None

Learning Objective: LIC-EDS-7 Obj 4

Question Source: Bank # ______
Modified Bank # ______(Note changes or attach parent)
New X

Question History: Last NRC Exam N/A

Question Cognitive Level: Memory or Fundamental Knowledge X
Comprehension or Analysis ______

10 CFR Part 55 Content: 55.41 X
55.43 ______

Comments:

A1 Ability to predict and/or monitor changes in parameters associated with operating the DC electrical system controls including: (CFR: 41.5 / 45.5)

A1.01 Battery capacity as it is affected by discharge rate

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	1	
	K/A #	064K1.01	
	Importance Rating	4.4	

Proposed Question:

Given the following plant conditions:

- Bus 2A has experienced an undervoltage condition
- The 31 EDG energized the 2A 480V bus
- Loads were appropriately sequenced onto the bus.
- The normal source to the bus is now available

Which one of the following correctly completes the description of the method for restoration of the normal power supply to the Bus 2A in accordance with SOP-EL-001, "DIESEL GENERATOR OPERATION"?

The EDG is...

A. unloaded in Unit Mode, placed in parallel with the normal feeder breaker closed and then removed from the bus, by opening the EDG output breaker.

B. transferred to Parallel Mode, using the "Unit/ Parallel" Switch, placed in parallel with the normal feeder breaker closed and then removed from the bus, by opening the EDG output breaker.

C. unloaded in Unit Mode and removed from the bus before the normal feeder breaker is closed.

D. transferred to Parallel Mode automatically when the sequencer is reset, unloaded and removed from the bus before the normal feeder breaker is closed.

Proposed Answer:

B. transferred to Parallel Mode, using the "Unit/ Parallel" Switch, placed in parallel with the normal feeder breaker closed and then removed from the bus.

Explanation (Optional):

A. Incorrect- Shifted to parallel

B. Correct per procedure

C. Incorrect- Shifted to parallel

D. Does not auto shift to parallel mode

Technical Reference(s): SOP-EL-001, "DIESEL GENERATOR OPERATION"

Proposed references to be provided to applicants during examination: None

Learning Objective: LIC-EDS-11 Obj 6

Question Source:	Bank #	INPO-15179 Salem 1 2/99
	Modified Bank #	______(Note changes or attach parent)
	New	______
Question History:	Last NRC Exam	Salem 1 2/99
Question Cognitive Level:	Memory or Fundamental Knowledge	
	Comprehension or Analysis	X
10 CFR Part 55 Content:	55.41	X
	55.43	

Comments:

K1 Knowledge of the physical connections and/or cause-effect relationships between the EDG system and the following systems:

K1.01 AC Distribution System

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	1	
	K/A #	064A2.02	
	Importance Rating	2.9	

Proposed Question:

The 32 Emergency Diesel Generator has been paralleled to the 6A 480 Volt Bus for 4 hours to complete surveillance testing. The following indications exist:

- EDG AC Volts- 490 Volts
- Frequency- 60.3 Hertz
- AC Kilowatts- 2050 KW
- KVARS- 1000 KVARs (Lagging)

Per "SOP-EL-001, "Diesel Generator Operation", what actions, if any, must be taken to ensure the continued operation of 32 EDG?

A. EDG KVARs limit is being exceeded and must be corrected by raising 32 EDG terminal voltage.

B. EDG KVARs limit is being exceeded and must be corrected by lowering 32 EDG terminal voltage.

C. EDG AC Kilowatts limit is being exceeded, and must be corrected by raising 32 EDG engine speed.

D. EDG AC Kilowatts limit is being exceeded, and must be corrected by lowering 32 EDG engine speed.

Proposed Answer:

D. EDG AC Kilowatts limit is being exceeded, and must be corrected by lowering 32 EDG engine speed.

Explanation (Optional):

A. Incorrect- KVAR Lag limit is 1300 lagging

B. Incorrect- KVAR Lag limit is 1300 lagging

C. Incorrect- Must lower engine speed to unload "real" power from the diesel generator

D. Correct- KW limit is 1950 KW for up to 2 hours, 1750 steady state, must lower engine speed to unload "real" power from the diesel generator

Technical Reference(s): SOP-EL-001, "DIESEL GENERATOR OPERATION"

Proposed references to be provided to applicants during examination: None

Learning Objective: LIC-EDS-11 Obj 5

Question Source: Bank # ______

Modified Bank # ______ (Note changes or attach parent)

New X

Question History: Last NRC Exam N/A

Question Cognitive Level: Memory or Fundamental Knowledge ______

Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 X

55.43 ______

Comments:

A2 Ability to (a) predict the impacts of the following malfunctions or operations on the ED/G system; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations:

(CFR: 41.5 / 43.5 / 45.3 / 45.13)

A2.02 Load, VARS, pressure on air compressor, speed droop,

frequency, voltage, fuel oil level, temperatures

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	1	
	K/A #	073K3.01	
	Importance Rating	4.2	

Proposed Question:

A liquid waste release is in progress from the Monitor Tank. Process Radiation Monitor R-18 subsequently loses electrical power. What is the status of the liquid waste release, and what actions are required?

A. The release continues, and a second sample must be taken within 15 minutes.

B. The release is automatically terminated, and the keyswitch is taken to block.

C. The release must be manually terminated, and can be resume once independent samples are taken.

D. The release continues, and a second sample must be immediately taken.

Proposed Answer:

B. The release is automatically terminated, and the keyswitch is taken to block.

Explanation (Optional):

A. Incorrect- The release terminates, the 15 minute sample is required if the release is started with R-18 inoperable.

B. Correct- Loss of power isolates RCV-018

C. Incorrect- Isolates in Auto

D. The release terminates

Technical Reference(s): SOP-WDS-014 "Liquid Waste Releases", ONOP-RM-001 "Failures of Radiation Monitors"

Proposed references to be provided to applicants during examination: None

Learning Objective: LIC-RDM-2 Obj 5

Question Source: Bank # ______
Modified Bank # ______(Note changes or attach parent)
New X

Question History: Last NRC Exam N/A

Question Cognitive Level: Memory or Fundamental Knowledge X
Comprehension or Analysis ______

10 CFR Part 55 Content: 55.41 X
55.43 ______

Comments:

K3 Knowledge of the effect that a loss or malfunction of the PRM system will have on the following:

(CFR: 41.7 / 45.6)

K3.01 Radioactive effluent releases

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	1	
	K/A #	076A1.02	
	Importance Rating	2.6	

Proposed Question:

The temperature of the Hudson River has risen to 82 degrees F. Which of the following Alarms would be indicative of the need to raise service water flow to the Component Cooling Water Heat Exchanger?

A. "Inst Air Comp 31 or 32 Trouble/ Auto Trip"
B. 32 Emergency Diesel Generator "High Water Temperature"
C. "SGBDHX-4 Blowdown Out. Temp. High"
D. "Spent Fuel Pit High Temperature"

Proposed Answer:

D. "Spent Fuel Pit High Temperature"

Explanation (Optional):

A. Incorrect- SW Direct Supply
B. Incorrect- SW Direct Supply
C. Incorrect- SW Direct Supply
D. Correct- Supplied By CCW

Technical Reference(s): ARP-019"Diesel Generators", ARP-012" Cooling Water and Air", ARP-013 "Bearing Monitor", ARP-006 "Condensate and Feedwater"

Proposed references to be provided to applicants during examination: None

Learning Objective: LIC-SAU-003 Obj 1

Question Source: Bank # ______
Modified Bank # ______(Note changes or attach parent)
New X

Question History: Last NRC Exam N/A

Question Cognitive Level: Memory or Fundamental Knowledge ______
Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 X
55.43 ______

Comments:

A1 Ability to predict and/or monitor changes in parameters
(to prevent exceeding design limits) associated with operating the SWS controls including:
(CFR: 41.5 / 45.5)
A1.02 Reactor and turbine building closed cooling water temperatures.

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	2	
Group #	1	
K/A #	078A3.01	
Importance Rating	3.2	

Proposed Question:

A large leak (approximately 400scfm) has occurred in the Nuclear Loop of the Instrument Air System. ONOP-IA-1, "Loss of Instrument Air" has been entered. Which statement below is correct concerning actions that are taken for this leak, in addition to attempting to isolate the leak?

A. No mitigating actions are required since the cross connect with the Conventional Loop of Instrument Air automatically provides adequate volume of air to Nuclear Loop components.

B. Verify that PCV-1142, "Station Air Backup To Instrument Air" valve automatically opens at 90psig to provide adequate volume of air to Nuclear Loop components.

C. Verify that PCV-1142, "Station Air Backup To Instrument Air" valve automatically opens at 95psig to provide adequate volume of air to Nuclear Loop components.

D. Manually open the inlet to PCV-1142, "Station Air Backup To Instrument Air" valve to provide adequate volume of air to Nuclear Loop components.

Proposed Answer:

B. Verify that PCV-1142, "Station Air Backup To Instrument Air" valve automatically opens at 90psig to provide adequate volume of air to Nuclear Loop components.

Explanation (Optional):

A. Incorrect- Conventional Loop can only provide 225 SCFM due to an orifice.

B. Correct- Correct setpoint for auto valve opening and volume of Station Air is 900SCFM

C. Incorrect- Wrong setpoint

D. Incorrect- Auto Only

Technical Reference(s): SOP-IA-001 "Instrument Air System Operation",ONOP-IA-1, "Loss of Instrument Air"

Proposed references to be provided to applicants during examination: None

Learning Objective: LIC-PSS-02 Obj 7

Question Source: Bank # ______

Modified Bank # ______ (Note changes or attach parent)

New X

Question History: Last NRC Exam N/A

Question Cognitive Level: Memory or Fundamental Knowledge ______

Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 X

55.43 ______

Comments:

2 Ability to (a) predict the impacts of the following malfunctions or operations on the IAS; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations:

(CFR: 41.5 / 43.5 / 45.3 / 45.13)

A3.01 Air pressure

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	1	
	K/A #	078 2.1.2	
	Importance Rating	4.0	

Proposed Question:

"INST. AIR COMPR. 31 OR 32 TROUBLE/AUTO TRIP" alarm annunciator is received on Panel SJF. Instrument air system parameters are normal. In accordance with AP-21, "Conduct of Operations" which of the following is the correct response to the alarm?

A. Depress the Alarm Acknowledge Pushbutton, Announce the alarm to the other licensed personnel, Verify acknowledgement from the CRS.

B. Announce the alarm to other licensed personnel, Verify acknowledgement from the CRS, Depress the Alarm Acknowledge Pushbutton.

C. Depress the Alarm Acknowledge Pushbutton, Announce the alarm to the other licensed personnel, Acknowledgement from the CRS is not required.

D. Announce the alarm to the other licensed personnel, Depress the Alarm Acknowledge Pushbutton, Acknowledgement from the CRS is not required.

Proposed Answer:

A. Depress the Alarm Acknowledge Pushbutton, Announce the alarm to the other licensed personnel, Verify acknowledgement from the CRS.

Explanation (Optional):

A. Correct- Sequence correct per AP-21, "Conduct of Operations"

B. Incorrect- Incorrect sequence

C. Incorrect- Must get acknowledgement from CRS

D. Incorrect- Must get acknowledgement from CRS

Technical Reference(s): AP-21, "Conduct of Operations"

Proposed references to be provided to applicants during examination: None

Learning Objective: LIC-EDS-01(0060)

Question Source:	Bank #		
	Modified Bank #	(Note changes or attach parent)	
	New	X	
Question History:	Last NRC Exam	N/A	
Question Cognitive Level:	Memory or Fundamental Knowledge		X
	Comprehension or Analysis		
10 CFR Part 55 Content:	55.41 X		
	55.43		

Comments:

2.1.2 **Knowledge of operator responsibilities during all modes of plant operation.**
(CFR: 41.10 / 45.13)

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	___	2
	Group #	___	1
	K/A #	2.4.46	
	Importance Rating	3.6	

Proposed Question:

The plant is at 100% power when the crew receives the "Containment High Pressure SI" First Out Annunciator on panel FDF. The following are the readings for the Containment Pressure channels:

PT-948A- 2.9 psig	PT-949A- 3.3 psig
PT-948B- 2.5 psig	PT-949B- 3.0 psig
PT-948C- 2.8 psig	PT-949C- 2.9 psig

Which of the following statements and associated procedural action is correct about the "Containment High Pressure SI" First Out Annunciator on panel FDF?

A. The alarm is valid, 2 of the associated Containment Pressure Channels are tripped, enter E-0 "Reactor Trip or Safety Injection".

B. The alarm is valid, 1 of the associated Containment Pressure Channels is tripped, enter E-0 "Reactor Trip or Safety Injection".

C. The alarm is not valid, 1 of the associated Containment Pressure Channels is tripped, enter the issue into the corrective action system.

D. The alarm is not valid, none of the associated Containment Pressure Channels is tripped, enter the issue into the corrective action system.

Proposed Answer:

D. The alarm is not valid, none of the associated Containment Pressure Channels is tripped, enter the issue into the corrective action system.

Explanation (Optional):

A. Incorrect- 948 A,B, and C Channels are not associated with this alarm.

B. Incorrect- 948 A,B, and C Channels are not associated with this alarm.

C. Incorrect- 949 D,E, and F Channels are below the 3 psig setpoint.

D. Correct- 949 D,E, and F Channels are below the 3 psig setpoint.

Technical Reference(s): ARP-005, "SBF2- Safeguards"

Proposed references to be provided to applicants during examination: None

Learning Objective: LIC-ESS- 1 Obj 1

Question Source: Bank # ______

Modified Bank # ______(Note changes or attach parent)

New X

Question History: Last NRC Exam N/A

Question Cognitive Level: Memory or Fundamental Knowledge ___

Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 _____

55.43 X

Comments:

2.4.46 **Ability to verify that the alarms are consistent with the plant conditions.**(CFR: 43.5 / 45.3 / 45.12)

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	2	
	K/A #	001K5.88	
	Importance Rating	3.4	

Proposed Question:

Given the following conditions, choose the correct statement concerning reactivity effects:

- The plant is at 100% power
- Rod Control is in Automatic, with Control Bank "D" at 190 steps.
- No reactor trip has occurred
- Current RCS Boron Concentration is 235 ppm
- Tave is 567.1 degrees F
- A Single Shutdown Bank Control Rod has just ratcheted inward to 65 steps on IRPI

RCS Temperature........

A. change is negligible since plant is early in core life, rod motion does not occur.

B. initially lowers, then automatic rod withdrawal restores Tave to 567.1 degrees F.

C. initially lowers, then automatic rod withdrawal restores Tave to 566.1 degrees F.

D. change is negligible since plant is late in core life, rod motion does not occur.

Proposed Answer:

C. initially lowers, then automatic rod withdrawal restores Tave to 566.1 degrees F.

Explanation (Optional):

A. Incorrect- Late in life, rod motion occurs

B. Incorrect- Restores temperature to within 1 degree F due to "lock up"

C. Correct- Restores temperature to within 1 degree F due to "lock up"

D. Incorrect- Late in life should get rod motion

Technical Reference(s): ONOP-RC-1 "Dropped or Misaligned Control Rod

Proposed references to be provided to applicants during examination: None

Learning Objective:	LIC-IXC-7 Obj 3		
Question Source:	Bank #		
	Modified Bank #	(Note changes or attach parent)	
	New	X	
Question History:	Last NRC Exam	N/A	
Question Cognitive Level:	Memory or Fundamental Knowledge		
	Comprehension or Analysis		X
10 CFR Part 55 Content:	55.41 X		
	55.43		

Comments:

K5 Knowledge of the following OPS Implications as applied to CRDs

K5.88 Effects of boron on temperature coefficient

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	2	
	K/A #	002A4.01	
	Importance Rating	3.8	

Proposed Question:

The plant is at 100% power. Indications of a small RCS leak have been noticed by the operating crew. The crew enters ONOP-RCS-7, "Excessive RCS Leakage". Step 3 "Monitor RCS Leakage" is implemented. The following computer trends are monitored:

Time	VCT Level	Pressurizer Level
0800	28%	48%
0815	29%	46%

What is the calculation of RCS leakage per ONOP-RCS-7, "Excessive RCS Leakage"?

A. 15.3 gpm

B. 11.3 gpm

C. 8.7 gpm

D. 7.1 gpm

Proposed Answer:

C. 8.7 gpm

Explanation (Optional):

A. Incorrect- Used "cold" thumbrule for gallons per % pressurizer level

B. Incorrect- Added VCT Level contribution

C. Correct- 19.3 gal/% for VCT Change, 75 gal/% for Pressurizer Level Change

D. Incorrect- Outside Answer Band

Technical Reference(s): ONOP-RCS-7, "Excessive RCS Leakage"

Proposed references to be provided to applicants during examination: None

Learning Objective: LIC-ONP-51 Obj 3

Question Source: Bank # ____

Modified Bank # ____(Note changes or attach parent)

New X

Question History: Last NRC Exam N/A

Question Cognitive Level: Memory or Fundamental Knowledge ____

Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 X

55.43 ____

Comments:

A4 Ability to manually operate and/or monitor in the control room: (CFR: 41.7 / 45.5 to 45.8)

A4.01 RCS leakage calculation program using the computer

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	___	2
	Group #	___	2
	K/A #	014A2.02	
	Importance Rating	3.6	

Proposed Question:

A Reactor Trip and Loss of Offsite Power have occurred, and 31 EDG has failed to start. 32 and 33 EDGs have been loaded. What actions, if any, are required associated with Control Rod Position Indication?

A. Commence Emergency Boration per the response not obtained column of E-0, "Reactor Trip or Safety Injection" for Rod Bottom Lights NOT Being Lit.

B. Take all Rod Position verification actions per E-0, "Reactor Trip or Safety Injection" and ES-0.1 " Reactor Trip Response" Rod Position Indications are functioning normally.

C. Commence Emergency Boration per response not obtained column of ES-0.1 " Reactor Trip Response".

D. Emergency Boration is NOT required in either E-0, "Reactor Trip or Safety Injection" and ES-0.1 " Reactor Trip Response", since Reactor Power is <5%, and IR Start Up Rate is negative.

Proposed Answer:

C. Commence Emergency Boration per response not obtained column of ES-0.1 " Reactor Trip Response".

Explanation (Optional):

A. Incorrect- Actions in E-0 inapropriate, Rx is Shutdown, no emergency boration steps in E-0

B. Incorrect- Power is lost to ARPIs

C. Correct- With no ARPI indication- this action is correct

D. Incorrect- Must verify rod position or borate in ES-0.1

Technical Reference(s): ES-0.1 " Reactor Trip Response"

Proposed references to be provided to applicants during examination: None

Learning Objective: LIC-EOP-32 Obj 12

Question Source: Bank # ______

Modified Bank # ______(Note changes or attach parent)

New X

Question History: Last NRC Exam N/A

Question Cognitive Level: Memory or Fundamental Knowledge ______

Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 ______

55.43 X

Comments:

A2 Ability to (a) predict the impacts of the following malfunctions or operations on the RPIS; and (b) based on those on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations:

(CFR: 41.5 / 43.5 / 45.3 / 45.13)

A2.02 Loss of power to the RPIS

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	2	
	K/A #	017A2.01	
	Importance Rating	3.5	

Proposed Question:

The plant has experienced a Loss of Coolant Accident, in which several vital ECCS systems have failed. RVLIS full range indication is 50%. While monitoring Core Exit Thermocouple (CET) temperatures it is noticed that several indications have failed both high and low indicating a combination of shorted and open CET circuits. According to the Critical Safety Function Status Trees, which one of the following correctly states how incore thermocouples would be used to determine the onset of inadequate core cooling, and transition to FR-C.1 " Response To Inadequate Core Cooling" ?

A. When any 5 core exit TCs are greater than 685 degrees F.

B. When any non-failed core exit TC is greater than 1200 degrees F.

C. When any 5 core exit TCs are greater than 1200 degrees F.

D. When any non-failed core exit TC is greater than 715 degrees F.

Proposed Answer:

C. When any 5 core exit TCs are greater than 1200 degrees F.

Explanation (Optional):

A. Incorrect- With RVLIS>33% not an entry condition

B. Incorrect- Decision not based on 1 CET reading- 5 chosen to account for failures

C. Correct- Per Safety Function Status Trees

D. Incorrect- Decision not based on 1 CET reading- 5 chosen to account for failures

Technical Reference(s): CSFTs

Proposed references to be provided to applicants during examination: None

Learning Objective: LIC-EOP-38 Obj 11

Question Source: Bank # INPO 9311 Ginna 10/98

Modified Bank # _______(Note changes or attach parent)

New _______

Question History: Last NRC Exam Ginna 10/98

Question Cognitive Level: Memory or Fundamental Knowledge _____

Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 X

55.43 _____

Comments:

A2 Ability to (a) predict the impacts of the following malfunctions or operations on the ITM system; and (b) based on those predictions, use procedures to correct, control or mitigate the consequences of those malfunctions or operations:

(CFR: 41.5 / 43.5 / 45.3 / 45.5)

A2.01 Thermocouple open and short circuits

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	2	
	K/A #	027K5.01	
	Importance Rating	3.4	

Proposed Question:

Given the following plant conditions:

- The plant was operating at 100 % power, for 100 consecutive days
- A Design Basis LOCA has occurred
- The Containment Atmosphere has been sampled and Iodine is present

Which ONE (1) of the following describes a performance and design attribute of the HEPA and Charcoal filters found in the Containment Fan Cooler Units?

The HEPA filter removes.....

A. particulates while the charcoal filter removes elemental and organic iodines, to meet the requirements of 10CFR50 App. A, GDC 60, "Control of Releases of Radioactive Materials To The Environment".

B. particulates while the charcoal filter removes elemental and organic iodines, to meet the requirements of 10CFR50 App. A, GDC 41" Containment Atmosphere Cleanup"

C. elemental and organic iodines while the charcoal filter removes particulate, to meet the requirements of 10CFR50 App. A, GDC 41" Containment Atmosphere Cleanup"

D. elemental and organic iodines while the charcoal filter removes particulate, to meet the requirements of 10CFR50 App. A, GDC 60, "Control of Releases of Radioactive Materials To The Environment".

Proposed Answer:

B. particulates while the charcoal filter removes elemental and organic iodines, to meet the requirements of 10CFR50 App. A, GDC 41" Containment Atmosphere Cleanup"

Explanation (Optional):

A. Incorrect- GDC 41" Containment Atmosphere Cleanup" is correct per TS basis

B. Correct- HEPA removes particulate, Iodines adsorbed in Charcoal, and GDC 41" Containment Atmosphere Cleanup" per TS basis

C. Incorrect- HEPA removes particulate

D. Incorrect- HEPA removes particulate

Technical Reference(s): LIC- ESS- 4 and FSAR

Proposed references to be provided to applicants during examination: None

Learning Objective: LIC-ESS- 4 Obj 2

Question Source:	Bank #	INPO- 4941 Robinson 2/96	
	Modified Bank #	_______(Note changes or attach parent)	
	New		
Question History:	Last NRC Exam	Robinson 2/96	
Question Cognitive Level:	Memory or Fundamental Knowledge		
	Comprehension or Analysis		X
10 CFR Part 55 Content:	55.41 X		
	55.43		

Comments:

K5 Knowledge of the operational implications of the following concepts as they apply to the CIRS:

(CFR: 41.7 / 45.7)

K5.01 Purpose of charcoal filters

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	2	
	K/A #	029A1.03	
	Importance Rating	3.3	

Proposed Question:

The plant is at 100% power late in core life. The following vapor containment parameters are observed:

- Vapor Containment Temperature: 115 degrees F
- Vapor Containment Humidity: 70%
- Vapor Containment Pressure: +2.8 psig

What, if any, vapor containment parameter is out of specification, and what action is required to return the parameter to specification?

A. Vapor Containment Temperature is out of specification, and running additional Fan Cooler Units is required.

B. Vapor Containment Humidity is out of specification, and running additional Fan Cooler Units is required.

C. Vapor Containment Pressure is out of specification, and performing a Containment Pressure Relief is required.

D. All parameters are within specification for the Vapor Containment, no actions are required.

Proposed Answer:

C. Vapor Containment Pressure is out of specification, and performing a Containment Pressure Relief is required.

Explanation (Optional):

A. Incorrect- TS Limit 120 degrees F

B. Incorrect- No limit for humidity

C. Correct- Pressure is out of spec High, Operations of Purge system for vacuum/pressure relief is required

D. Incorrect- Pressure is out of spec

Technical Reference(s): SOP-CB-003 "Containment Pressure Relief and Purge System Operation

Proposed references to be provided to applicants during examination: None

Learning Objective: LIC-ESS-03 (0463)

Question Source: Bank # ____

Modified Bank # ____ (Note changes or attach parent)

New X

Question History: Last NRC Exam N/A

Question Cognitive Level: Memory or Fundamental Knowledge X

Comprehension or Analysis ____

10 CFR Part 55 Content: 55.41 X

55.43 ____

Comments:

A1 Ability to predict and/or monitor changes in parameters to prevent exceeding design limits) associated with operating the Containment Purge System controls including:

(CFR: 41.5 / 45.5)

A1.03 Containment pressure, temperature, and humidity

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	2	
	K/A #	035A2.02	
	Importance Rating	4.4	

Proposed Question:

A reactor trip has occurred due to failure of the "A" reactor trip breaker. All systems functioned normally during the reactor trip. The following conditions exist:

- All Control Rods inserted
- All 480V buses are powered by their normal sources
- Secondary System parameters are normal for post trip conditions
- E-0, "Reactor Trip or Safety Injection" was entered, and at step 4 a transition was made to ES-0.1, "Reactor Trip Response"
- Tave is 539 degree F and lowering slowly
- Condenser Steam Dumps and S/G Atmospheric Relief Valves are closed

What is the status of Feedwater Flow to the Steam Generators, and what actions are required to be taken for the given plant conditions?

A. Main Feedwater is supplying flow via Feedwater Regulating Valve Bypass Valves at 75% open to all four Steam Generators. Take manual control of Feedwater Regulating Bypass Valves and lower flow to 1% of total feed flow.

B. Main Feedwater is supplying flow via Feedwater Regulating Valves at 75% open to all four Steam Generators. Take manual control of Feedwater Regulating Valves and lower flow to 1% of total feed flow.

C. Auxiliary Feedwater is supplying flow via 31 and 33 Auxiliary Feedwater Pumps to all four Steam Generators. Throttle AFW flow to slightly greater than 365 gpm until 1 S/G level is greater than 9%.

D. Auxiliary Feedwater is supplying flow via 32 Auxiliary Feedwater Pump to all four Steam Generators. Throttle AFW flow to slightly greater than 365 gpm until 1 S/G level is greater than 9%.

Proposed Answer:

C. Auxiliary Feedwater is supplying flow via 31 and 33 Auxiliary Feedwater Pumps to all four Steam Generators. Throttle AFW flow to slightly greater than 365 gpm until 1 S/G level is greater than 9%.

Explanation (Optional):

A. Incorrect- Main Feedwter isolates post trip, close to an outdated mod.

B. Incorrect- Main Feedwater isolates post trip

C. Correct- Auto start and feed of 31 and 33 AFW pumps

D. Incorrect- 32 Pump starts and runs in standby

Technical Reference(s): LIC- SPC-009

Proposed references to be provided to applicants during examination: None

Learning Objective: LIC-SPC-005 Obj 5, LIC-SPC- 009 Obj 2

Question Source:	Bank #	______	
	Modified Bank #	______ (Note changes or attach parent)	
	New	X	
Question History:	Last NRC Exam	N/A	
Question Cognitive Level:	Memory or Fundamental Knowledge		______
	Comprehension or Analysis		X
10 CFR Part 55 Content:	55.41 X		
	55.43 ______		

Comments:

A2 Ability to (a) predict the impacts of the following malfunctions or operations on the S/G; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations:

(CFR: 41.5 / 43.5 / 45.3 / 45.5)

A2.02 Reactor trip/turbine trip

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	2	
	K/A #	015K6.01	
	Importance Rating	3.2	

Proposed Question:

During a normal plant shutdown, intermediate range detector channel N36 fails high with reactor power at 6%. Which ONE of the following statements describes how this failure affects the reactor and subsequent operation of the Nuclear Instrumentation system?

The reactor will:

A. trip on high IR flux and source range NIs will have to be manually re-energized.

B. NOT trip and source range NIs will have to be manually reenergized.

C. NOT trip, and source range NIs will re-energize when N35 reaches the proper setpoint.

D. trip on high IR flux, and source range NIs will re-energize when N35 reaches the proper setpoint.

Proposed Answer:

A. trip on high IR flux and source range NIs will have to be manually re-energized.

Explanation (Optional):

A. Correct- Power is < P-10 so Intermediate Range trip is enabled. Takes 2/2 lowering Intermediate Ranges to energize source range NIs

B. Incorrect- Trip occurs

C. Incorrect- Trip occurs

D. Incorrect- Must manually energize Source Range Instruments

Technical Reference(s): LIC-IXC-5

Proposed references to be provided to applicants during examination: None

Learning Objective: LIC-IXC-5 Obj 5

Question Source:	Bank #	INPO-11042 Kewaunee 02/1997
	Modified Bank #	______(Note changes or attach parent)
	New	______

Question History:	Last NRC Exam	Kewaunee 02/1997
Question Cognitive Level:	Memory or Fundamental Knowledge	______
	Comprehension or Analysis	X
10 CFR Part 55 Content:	55.41 X	
	55.43 ______	

Comments:

K6 Knowledge of the effect of a loss or malfunction on the following will have on the NIS (CFR41.7,45.7)

K6.01 Sensors, Detectors, and Indicators

Examination Outline Cross-reference:	Level	RO		SRO
	Tier #	___		2
	Group #	___		2
	K/A #	55	2.2.17	
	Importance Rating	3.5		

Proposed Question:

The 32 Steam Jet Air Ejector(SJAE) is experiencing backfiring, and must be swapped from service for troubleshooting and repair during plant operations. There will be no breach of the SJAE, Maintenance plans to ultrasonically test the "air-lane" to ensure that there is no foreign material in it. How is appropriate plant configuration maintained during this maintenance evolution?

A. The Maintenance Work Package must include steps to realign valves to place 32 SJAE back into service, after maintenance since there are no other means to control the system status.

B. The 32 SJAE must be swapped to a standby SJAE and the 32 SJAE must be tagged out for the purpose of controlling configuration.

C. The 32 SJAE is swapped to a standby SJAE utilizing a System Operating Procedure, and as such is controlled such that configuration is maintained.

D. The 32 SJAE is swapped to a standby SJAE, and configuration control must be controlled with a "Check Off List" in accordance with OD-9, "System Status Control".

Proposed Answer:

C. The 32 SJAE is swapped to a standby SJAE utilizing a plant operating procedure, and as such is controlled such that configuration is maintained.

Explanation (Optional):

A. Incorrect- Not required if removed and returned via an approved procedure

B. Incorrect- Not required if removed and returned via an approved procedure, and the maintenance does not require tagging for personnel or plant safety reasons

C. Correct- This is an acceptible exclusion to the requirements of OD-9, a checkoff list is not required

D. Incorrect- Controlled by an approved procedure, this is an exclusion to OD-9

Technical Reference(s): OD-9, "System Status Control"

Proposed references to be provided to applicants during examination: None

Learning Objective: ______

Question Source: Bank # ______
Modified Bank # ______(Note changes or attach parent)
New X

Question History: Last NRC Exam ______

Question Cognitive Level: Memory or Fundamental Knowledge ______

Comprehension or Analysis ___X___

10 CFR Part 55 Content: 55.41 ______
55.43 ___X___

Comments:
2.2.17 **Knowledge of the process for managing maintenance activities during power operations.**
(CFR: 43.5 / 45.13)

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	2	
	K/A #	071K4.06	
	Importance Rating	3.5	

Proposed Question:

Which of the following combinations of Process Radiation Monitors will cause an automatic closure of RCV-014 "Waste Gas Discharge Flow Control Valve" during a Waste Gas Decay Tank release, terminating the release?

A. R-14 "Plant Vent Gas PRM" AND R-12 "VC Gas Activity PRM"

B. R-20 "Waste Gas Activity PRM" AND R-27" Wide Range Plant Vent Gaseous Activity PRM"

C. R-12 "VC Gas Activity PRM" AND R-20 "Waste Gas Activity PRM"

D. R-14 "Plant Vent Gas PRM" AND R-27" Wide Range Plant Vent Gaseous Activity PRM"

Proposed Answer:

D. R-14 "Plant Vent Gas PRM" AND R-27" Wide Range Plant Vent Gaseous Activity PRM"

Explanation (Optional):

A. Incorrect- R-12, although mentioned in WGDT release procedure does not auto isolate release

B. Incorrect- R-20, although mentioned in WGDT release procedure does not auto isolate release

C. Incorrect- Neither R-20 or R-12 terminate a release

D. Correct- Either detector terminates a release.

Technical Reference(s): SOP-WDS-013 "Gaseous Waste Releases"

Proposed references to be provided to applicants during examination: None

Learning Objective: LIC-PSA-6 Obj 5

Question Source:
Bank # ______
Modified Bank # ______(Note changes or attach parent)
New X

Question History: Last NRC Exam N/A

Question Cognitive Level:
Memory or Fundamental Knowledge X
Comprehension or Analysis ______

10 CFR Part 55 Content:
55.41 X
55.43 ______

Comments:

K4 Knowledge of design feature(s) and/or interlock(s) which provide for the following:(CFR: 41.7)

K4.06 Sampling and monitoring of waste gas release tanks

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	2	
	K/A #	072K4.02	
	Importance Rating	3.4	

Proposed Question:

The plant is in Mode 6 with fuel reconstitution activities underway in the Fuel Storage Building. Area Radiation Monitor R-5 "Fuel Storage Building ARM" comes into alarm. Which of the following describes automatic actions, if any, as a result of this alarm?

A. FSB Supply Fan Stops, FSB Exhaust Fan Starts, FSB Sliding Door Shuts, Charcoal Filter Inlet and Outlet Face Dampers Open.

B. FSB Supply Fan Starts, FSB Exhaust Fan Starts, FSB Sliding Door Shuts, Charcoal Filter Inlet and Outlet Face Dampers Open.

C. FSB Supply Fan Starts, FSB Exhaust Fan Starts, FSB Sliding Door Opens, Charcoal Filter Inlet and Outlet Face Dampers Isolate.

D. Area Radiation Monitor R-5 "Fuel Storage Building ARM" has only alarm function, there are no automatic actions.

Proposed Answer:

A. FSB Supply Fan Stops, FSB Exhaust Fan Starts, FSB Sliding Door Shuts, Charcoal Filter Inlet and Outlet Face Dampers Open.

Explanation (Optional):

"A" has the only correct sequence of events

Technical Reference(s): SOP-RM-1 "Area Radiation Monitors"

Proposed references to be provided to applicants during examination: None

Learning Objective: LIC-RDM-3 Obj 5

Question Source:	Bank #		
	Modified Bank #	(Note changes or attach parent)	
	New	X	
Question History:	Last NRC Exam	N/A	
Question Cognitive Level:	Memory or Fundamental Knowledge		X
	Comprehension or Analysis		
10 CFR Part 55 Content:	55.41	X	
	55.43		

Comments:

K4 Knowledge of ARM system design feature(s) and/or interlock(s) which provide for the following:

(CFR: 41.7)

K4.02 Fuel building isolation

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	2	
	K/A #	086K6.04	
	Importance Rating	2.9	

Proposed Question:

A large fire has started in oil soaked lagging on 32 Main Boiler Feed Pump. The Heat Activated Detector (HAD) near the fire has failed. Assuming the fire is of sufficient size to actuate the HAD if it were operable, which statement below is correct?

A. The system is a "wet pipe" fire suppression system, and will provide fire suppression when local "fusible links" melt.

B. The system is a "pre-action" fire suppression system, and will NOT supply fire suppression since the Heat Activated Detector (HAD) has failed.

C. The system is a "deluge" fire suppression system, and will NOT supply fire suppression since the Heat Activated Detector (HAD) has failed.

D. The system provides a local and control room alarm ONLY, and manual fire suppression action is necessary via portable equipment.

Proposed Answer:

C. The system is a "deluge" fire suppression system, and will NOT supply fire suppression since the Heat Activated Detector (HAD) has failed.

Explanation (Optional):

Answer "C" is the only correct answer, the MBFP has a deluge system and will not actuate since the HAD has failed.

Technical Reference(s): LIC- PSS-5

Proposed references to be provided to applicants during examination: None

Learning Objective: LIC-PSS-5 Obj 2

Question Source: Bank # ____

Modified Bank # ____ (Note changes or attach parent)

New X

Question History: Last NRC Exam N/A

Question Cognitive Level: Memory or Fundamental Knowledge X

Comprehension or Analysis ____

10 CFR Part 55 Content: 55.41 X

55.43 ____

Comments:

K6 Knowledge of the effect of a loss or malfunction on the Fire Protection System following will have on the : (CFR: 41.7 / 45.7)

K6.04 Fire, smoke, and heat detectors

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	___	3
	Group #	___	___
	K/A #	2.1.11	
	Importance Rating	3.8	

Proposed Question:

Given the following plant conditions:

- The Plant is in MODE 1.
- A PORV block valve is open, and will not close.

Which ONE of the following must be performed within 1 hour per Technical Specifications?

A. Verify the other PORV block valve is Open and Operable.
B. Place the affected PORV in the Closed position.
C. Remove electrical power from the affected PORV block valve.
D. Initiate action to place the unit in a MODE in which the specification does not apply.

Proposed Answer:
B. Place the affected PORV in the Closed position.

Explanation (Optional):
A. Incorrect- Listed in other Tech Specs, but not in IP3
B. Correct- Per ITS
C. Incorrect- Action for failed PORV
D. Incorrect- Can operate with block closed for 7 days

Technical Reference(s): Improved Technical Specifications- IP3
Proposed references to be provided to applicants during examination: None

Learning Objective: LIC-PSA-10 (2288)

Question Source: Bank # INPO-5113 Farley 10/95
Modified Bank # _______(Note changes or attach parent)
New _______

Question History: Last NRC Exam Farley 10/95

Question Cognitive Level: Memory or Fundamental Knowledge X
Comprehension or Analysis _____

10 CFR Part 55 Content: 55.41 _____
55.43 X

Comments:
2.1.11 **Knowledge of less than one hour technical specification action statements for systems.**
(CFR: 43.2 / 45.13)

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	___	3
	Group #	___	___
	K/A #	2.1.14	
	Importance Rating	3.3	

Proposed Question:
Which of the following conditions would require notification of UNIT 2 Operations Department personnel "as time permits" per AP-21, "Conduct of Operations"?

A. Entry into a 1 Hour Technical Specification Limiting Condition of Operation Action Statement.
B. An Injury to plant personnel that does not require an ambulance.
C. A small fire that was extinquished in 5 minutes in the Operations Management office area.
D. A planned WGDT release per SOP-WDS-013, "Gaseous Waste Releases".

Proposed Answer:
C. A small fire that was extinquished in 5 minutes in the Operations Management office area.

Explanation (Optional):
A,B, and D are incorrect as they are not listed in AP-21 pgs 23 and 24
C. Correct- Plant Fires is a listed item

Technical Reference(s): AP-21, "Conduct of Operations"

Proposed references to be provided to applicants during examination: None

Learning Objective: LIC-TSP-28 (9078)

Question Source: Bank # ______
Modified Bank # ______(Note changes or attach parent)
New X

Question History: Last NRC Exam N/A

Question Cognitive Level: Memory or Fundamental Knowledge X
Comprehension or Analysis ______

10 CFR Part 55 Content: 55.41 ______
55.43 X

Comments:
2.1.14 **Knowledge of system status criteria which require the notification of plant personnel.**
(CFR: 43.5 / 45.12)

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	3	
	Group #		
	K/A #	2.1.29	
	Importance Rating	3.9	

Proposed Question:

The Operations Manager has required that a Valve Lineup Verification be completed on the Chemical and Volume Control System as a corrective action for some identified mis-positioning events coming out of the recent plant outage. One of the valves is in a "very high radiation area" and is a locked open component. Which of the methods listed below is acceptable to verify the locked valve's position per OD-35 "Component Verification and Control"?

A. A verification of Radiation Protection records is completed to ensure that no one entered the area since the last time the valve was positioned.

B. Flow may be initiated through the system from the Control Room and a verification of flow can be used to confirm the valve is in the proper position.

C. A paperwork review of the previous stop tag release paperwork and previous check off list is completed such that the adminstrative position is understood.

D. It is not possible to enter the area that the valve is in, so the verification paperwork is marked "N/A" for this valve.

Proposed Answer:

B. Flow may be initiated through the system from the Control Room and a verification of flow can be used to confirm the valve is in the proper position.

Explanation (Optional):

A. Incorrect- Not listed as acceptable in procedure

B. Correct- Per alternate methods of verification in OD-35

C. Incorrect- paperwork review is not a method in OD-35

D. Incorrect- "N/A" is not a method in OD-35

Technical Reference(s): OD-35 "Component Verification and Control"?

Proposed references to be provided to applicants during examination: None

Learning Objective: ______

Question Source:	Bank #	
	Modified Bank #	(Note changes or attach parent)
	New	X

Question History: Last NRC Exam N/A

Question Cognitive Level:	Memory or Fundamental Knowledge	X
	Comprehension or Analysis	

10 CFR Part 55 Content:	55.41	X
	55.43	

Comments:

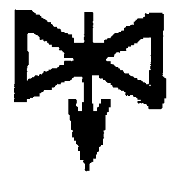
2.1.29 **Knowledge of how to conduct and verify valve lineups** (CFR: 41.10/45.1/45.12)

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	3	
	Group #		
	K/A #	2.1.24	
	Importance Rating	3.1	

Proposed Question:

The valve body print designation shown below is indicative of which of the following type valve?

A. Gate Valve
B. Diaphragm Valve
C. Needle Valve
D. Butterfly Valve



Proposed Answer:

C. Needle Valve

Explanation (Optional):

Per Dwg # 9321-D-20163

Technical Reference(s): Dwg # 9321-D-20163 "Flow Diagram Symbols

Proposed references to be provided to applicants during examination: None

Learning Objective: Basic Drawings

Question Source:	Bank #	
	Modified Bank #	(Note changes or attach parent)
	New	X

Question History: Last NRC Exam N/A

Question Cognitive Level:	Memory or Fundamental Knowledge	X
	Comprehension or Analysis	

10 CFR Part 55 Content:	55.41	X
	55.43	

Comments:

2.1.24 **Ability to obtain and interpret station electrical and mechanical drawings.**
(CFR: 45.12 / 45.13)

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	___	3
	Group #	___	___
	K/A #	2.2.29	
	Importance Rating	2.2.29	

Proposed Question:

The plant is in Mode 6 with core offload in progress. A fuel assemble is in the refueling machine mast, and motion is in progress toward the upender in the refueling pool. While exiting the core area, the bottom of the mast becomes entangled in a temporary lighting assembly. The movement of the bridge and trolley causes the light fixture to scrape across the top of the core leaving visible marks on the tops of several fuel assemblies. In addition, small bubbles that were not previously seen are now rising from the affected area. The Control Room informs the Refueling SRO that R-12 indication has increased slightly.

Which of the following actions is the RESPONSIBILITY of the Refueling SRO?

A. Implement the procedure for irradiated fuel damage in the refueling cavity, from the refueling bridge.

B. Sound the Containment Evacuation Alarm and evacuate non-essential personnel from the Containment.

C. Initiate an immediate evacuation of all personnel from the containment.

D. Immediately move the affected fuel assembly to the spent fuel pool.

Proposed Answer:

C. Initiate an immediate evacuation of all personnel from the containment.

Explanation (Optional):

A. Incorrect- Not in accordance with ONOP-RP-0001

B. Incorrect- Control Room sounds the alarm

C. Correct- First action in ONOP-RP-0001 is to evacuate all personnel from containment

D. Incorrect- First action in ONOP-RP-0001 is to evacuate all personnel from containment

Technical Reference(s): ONOP-RP-1, "Irradiated Fuel Damage in the Refueling Cavity"

Proposed references to be provided to applicants during examination: None

Learning Objective:	LIC-ONP-34 Obj 3		
Question Source:	Bank #	___	
	Modified Bank #	___ (Note changes or attach parent)	
	New	X	
Question History:	Last NRC Exam	___	
Question Cognitive Level:	Memory or Fundamental Knowledge		X
	Comprehension or Analysis		___
10 CFR Part 55 Content:	55.41 ___		
	55.43 X		

Comments:

2.2.29 Knowledge of SRO fuel handling responsibilities

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	___	3
	Group #	___	___
	K/A #	2.2.21	
	Importance Rating	3.5	

Proposed Question:

Which of the following individuals is responsible for " declaring a system inoperable" when a system is taken out of service for a planned LCO action statement entry for maintenance and for "declaring a system operable" after all Post Work and Operability testing is completed?

A. LCO Action Statement Coordinator

B. Control Room Supervisor

C. Shift Manager

D. Work Control Supervisor

Proposed Answer:

C. Shift Manager

Explanation (Optional):

C is the only correct answer per AP-53," Control of Maintenance Activities Under LCO Action Statements" Step 4.8.7 and 4.7.4

Technical Reference(s): AP-53," Control of Maintenance Activities Under LCO Action Statements"

Proposed references to be provided to applicants during examination: None

Learning Objective: ____________

Question Source: Bank # ______

Modified Bank # ______(Note changes or attach parent)

New X

Question History: Last NRC Exam N/A

Question Cognitive Level: Memory or Fundamental Knowledge X

Comprehension or Analysis ______

10 CFR Part 55 Content: 55.41 ______

55.43 X

Comments:

2.2.21 **Knowledge of pre- and post-maintenance operability requirements.** (CFR: 43.2)

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	3	
	Group #		
	K/A #	2.2.6	
	Importance Rating	3.3	

Proposed Question:

Which one of the following correctly states the MAXIMUM time allowable to complete QTR and QSR reviews for a conditional Temporary Procedure Change?

Proposed Answer:

A. 2 Days

B. 7 Days

C. 14 Days

D. 21 Days

Explanation (Optional):

C. 14 Days

Technical Reference(s): AP-3 , rev 44

Proposed references to be provided to applicants during examination: None

Learning Objective: ____________

Question Source: Bank # ______

Modified Bank # ______ (Note changes or attach parent)

New X

Question History: Last NRC Exam ______

Question Cognitive Level: Memory or Fundamental Knowledge X

Comprehension or Analysis ______

10 CFR Part 55 Content: 55.41 X

55.43 ______

Comments:

2.2.6 **Knowledge of the process for making changes in procedures as described in the SAR**

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	3	
	Group #		
	K/A #	2.2.25	
	Importance Rating	3.7	

Proposed Question:
What is safety limit basis for the over-power delta-temperature reactor trip setpoint?

A. Fuel maximum kw/ft.
B. Fuel peak clad temperature.
C. Fuel surface DNBR.
D. RCS over-pressurization.

Proposed Answer:
A. Fuel maximum kw/ft.

Explanation (Optional):

Technical Reference(s): Improved Tech Specs Basis Document

Proposed references to be provided to applicants during examination: None

Learning Objective: LIC-OPC-11 (1062)

Question Source: Bank # INPO- 10511 IP3 4/96
Modified Bank # ______(Note changes or attach parent)
New ______

Question History: Last NRC Exam IP-3 4/96

Question Cognitive Level: Memory or Fundamental Knowledge X
Comprehension or Analysis ______

10 CFR Part 55 Content: 55.41 X
55.43 ______

Comments:
2.2.25 **Knowledge of bases in technical specifications for limiting conditions for operations and safety limits.** (CFR: 43.2)

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	___	3
	Group #	___	___
	K/A #	2.3.6	
	Importance Rating	3.4	

Proposed Question:

While reviewing a release permit for a waste monitor tank, it is determined that R-18 " Waste Disposal Liquid" Monitor has failed its source check. Per SOP-WDS-14, "Liquid Waste Releases" what are the required actions, if any, of the Control Room Supervisor ?

A. Do not approve the liquid waste discharge, secure the lineup , liquid waste discharge is not permitted until R-18 is repaired.

B. Approve the liquid waste discharge, no other actions required, R-18 has a backup monitor.

C. Approve the liquid waste discharge, as long a a second sample is drawn and calculations are second verified prior to the release.

D. Approve the liquid waste discharge, and ensure that continuous effluent sampling is conducted throughout the liquid waste discharge.

Proposed Answer:

C. Approve the liquid waste discharge, as long a a second sample is drawn and calculations are second verified prior to the release.

Explanation (Optional):

Per SOP-WDS-14, "Liquid Waste Releases" , with R-18 OOS the release can continue as long as a second sample is taken and the calculations are second checked.

Technical Reference(s): SOP-WDS-14, "Liquid Waste Releases"

Proposed references to be provided to applicants during examination: None

Learning Objective: LIC-PSA-5 Obj 7

Question Source: Bank # ______
Modified Bank # ______(Note changes or attach parent)
New X

Question History: Last NRC Exam N/A

Question Cognitive Level: Memory or Fundamental Knowledge X
Comprehension or Analysis ______

10 CFR Part 55 Content: 55.41 ______
55.43 X

Comments:

2.3.6 **Knowledge of the requirements for reviewing and approving release permits.** (CFR: 43.4 / 45.10)

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	___	3
	Group #	___	___
	K/A #	2.3.4	
	Importance Rating	3.1	

Proposed Question:

A LOCA Outside of Containment has occurred at the plant. In addition, during post trip EOP actions it was determined that reactor coolant radiation levels are significantly above normal. 15 minutes have elapsed since the reactor trip occurred. A General Emergency Classification has been made by the Shift Manager. The emergency response organization has not yet been staffed. It has been determined that the LOCA can be isolated from the Mechanical Penetration area, however dose rates are very high. Radiation Protection Group surveys indicate that the general area dose rate is 50 REM per hour in the area of the Mechanical Penetration area. Using Emergency Exposure Limits, what is the maximum stay time for an operator entering the area to isolate the leak?

A. 6 minutes

B. 30 minutes

C. 90 minutes

D. 120 minutes

Proposed Answer:

B. 30 minutes

Explanation (Optional):

For "protection of large populations" the dose limit utilizing Emergency Exposure limits is 25 REM. If the Dose Rate is 50 REM/hr in the vicinity, the stay time would be 30 minutes. A,C,D distractors are equivalant to 5Rem, 75Rem, and 100 Rem- All plausible Emer and Non Emer numbers.

Technical Reference(s): Emergency Plan

Proposed references to be provided to applicants during examination: None

Learning Objective: LIC-ERT-12 Obj 15

Question Source:	Bank #	___	
	Modified Bank #	___	(Note changes or attach parent)
	New	X	
Question History:	Last NRC Exam	___	
Question Cognitive Level:	Memory or Fundamental Knowledge	X	
	Comprehension or Analysis	___	

10 CFR Part 55 Content: 55.41 ___

55.43 X

Comments:

2.3.4 **Knowledge of Radiation Exposure Limits and Contamination Control, including permissible levels in excess of those authorized** (CFR: 43.4/45.10)

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	3	
	Group #		
	K/A #	2.3.11	
	Importance Rating	3.2	

Proposed Question:

A Steam Generator Tube Rupture has just occurred on 32 Steam Generator. E-3, "Steam Generator Tube Rupture" has been implemented. Which of the following actions is performed in accordance with E-3, "Steam Generator Tube Rupture" to **DIRECTLY** limit the potential radiation release to the public?

A. Trip all 4 Reactor Coolant Pumps if Subcooling is less than 32 degrees F.

B. Adjust ruptured S/G atmospheric relief valve controller to 1040 psig.

C. Entering E-2, "Faulted S/G Isolation" for a S/G depressurizing in an uncontrolled manner.

D. Verifying that the ruptured S/G pressure is greater than 400 psig.

Proposed Answer:

B. Adjust ruptured S/G atmospheric relief valve controller to 1040 psig.

Explanation (Optional):

A. Incorrect- Basis to protect against operator misdiagnosis

B. Correct- Preferentially keeps ruptured S/G atmospheric valve closed, other S/Gs remove decay heat

C. Incorrect- Stops feeding a faulted S/G with action steps in E-3

D. Incorrect- Determines appropriate cooldown strategy

Technical Reference(s): EOP Technical Basis Document

Proposed references to be provided to applicants during examination: None

Learning Objective: LIC-EOP-35 Obj14

Question Source:	Bank #	
	Modified Bank #	(Note changes or attach parent)
	New	X
Question History:	Last NRC Exam	N/A

Question Cognitive Level:	Memory or Fundamental Knowledge	X
	Comprehension or Analysis	

10 CFR Part 55 Content:	55.41	X
	55.43	

Comments:

2.3.11 **Ability to control radiation releases.**

(CFR: 45.9 / 45.10)

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	3	
	Group #		
	K/A #	2.3.1	
	Importance Rating	3.0	

Proposed Question:

Which ONE (1) of the following is the required radiological posting for an area in which a person could receive a radiation dose of 0.075 rem in an hour?

A. No Posting Is Required
B. Radiation Area
C. High Radiation Area
D. Very High Radiation Area

Proposed Answer:
B. Radiation Area

Explanation (Optional):

Technical Reference(s): Rad Worker Training

Proposed references to be provided to applicants during examination: None

Learning Objective: Rad Worker Training

Question Source:
Bank # INPO- 17831 Sequoyah 6/98
Modified Bank # ______(Note changes or attach parent)
New ______

Question History: Last NRC Exam Sequoyah 6/98

Question Cognitive Level:
Memory or Fundamental Knowledge X
Comprehension or Analysis ______

10 CFR Part 55 Content:
55.41 X
55.43 ______

Comments:
2.3.1 **Knowledge of 10 CFR: 20 and related facility radiation control requirements.**
(CFR: 41.12 / 43.4. 45.9 / 45.10)

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	3	
	Group #		
	K/A #	2.3.10	
	Importance Rating	3.3	

Proposed Question:
ONOP-RM-002, "High Activity- Radiation Monitoring System" has been entered due to a valid alarm on the R-33 "Control Room Gas" Radiation Monitor. What actions are required to protect against personnel exposure?

A. Immediately Evacuate the Main Control Room
B. Place Control Room Ventilation In "100% Recirculation" Mode
C. Secure the Control Room Ventilation System Until Operators Don EABs
D. Place Control Room Ventilation In "10% Incident" Mode

Proposed Answer:
D. Place Control Room Ventilation In "10% Incident" Mode

Explanation (Optional):
This is the correct action per ONOP-RM-2 Att 7

Technical Reference(s): ONOP-RM-002, "High Activity- Radiation Monitoring System"

Proposed references to be provided to applicants during examination: None

Learning Objective: LIC-ONP-33 Obj 4

Question Source:
Bank # ______
Modified Bank # ______(Note changes or attach parent)
New X

Question History: Last NRC Exam N/A

Question Cognitive Level:
Memory or Fundamental Knowledge X
Comprehension or Analysis ______

10 CFR Part 55 Content:
55.41 X
55.43 ______

Comments:
2.3.10 **Ability to perform procedures to reduce excessive levels of radiation and guard against personnel exposure.** (CFR: 43.4 / 45.10)

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	___	3
	Group #	___	___
	K/A #	2.4.38	
	Importance Rating	4.0	

Proposed Question:

A Loss of Offsite Power has occurred at Indian Point 3, you are filling in as the Shift Manager, and have assumed the duties of the Emergency Director during the early stages of this event. What are the time limits to complete the Emergency Classification and complete the Immediate Actions in the flow chart of the Emergency Plan Implementing Procedure IP-2001?

A. Emergency Classification- within 15 minutes of the initiating conditions, Immediate Actions- within 15 minutes of the "declaration"

B. Emergency Classification- within 15 minutes of the initiating conditions, Immediate Actions- within 30 minutes of the "declaration"

C. Emergency Classification- within 30 minutes of the initiating conditions, Immediate Actions- within 15 minutes of the "declaration"

D. Emergency Classification- within 30 minutes of the initiating conditions, Immediate Actions- within 30 minutes of the "declaration"

Proposed Answer:

A. Emergency Classification- within 15 minutes of the initiating conditions, Immediate Actions- within 15 minutes of the "declaration"

Explanation (Optional):

Per IP-2001 steps 4.2 A and B, it should take no longer than 15 minutes to classify the event and no longer than 15 minutes to complete Immediate Actions once declaration is complete

Technical Reference(s): Per IP-2001 steps 4.2 A and B

Proposed references to be provided to applicants during examination: None

Learning Objective:	LIC-ERT-12 Obj 6		
Question Source:	Bank #	___	
	Modified Bank #	___	(Note changes or attach parent)
	New	X	
Question History:	Last NRC Exam	N/A	

Question Cognitive Level:	Memory or Fundamental Knowledge	X
	Comprehension or Analysis	___
10 CFR Part 55 Content:	55.41 ___	
	55.43 X	

Comments:

2.4.38 **Ability to take actions called for in the facility emergency plan, including (if required) supporting or acting as emergency coordinator.**

(CFR: 43.5 / 45.11)

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	3	
	Group #		
	K/A #	2.4.13	
	Importance Rating	3.9	

Proposed Question:

The plant has experienced a Reactor Trip, and the crew has transitioned to ES-0.1 "Reactor Trip Response". Step 1 of this Emergency Operating Procedure has a ring of Asterisks (**) around the step. What is the meaning of the Asterisks(**) in terms of how the step is carried out by the operating crew?

The CRS reads that the step is a(n).......

A. "continuous action step" and if at any time during the EOP in effect conditions require the "response not obtained" actions to be completed, then the crew returns to that step and completes the actions.

B. "continuous action step" and if at any time in the EOP Network conditions require the "response not obtained" actions to be completed, then the crew returns to that step and completes the actions.

C. "Immediate Action Step" and that completion of the step needs to proceed without delay. No crew informational briefs will be conducted during the completion of the step and external communications will be kept to a minimum.

D. "caution or note" associated with the step in effect. Then the "caution or note" is read and the CRS receives confirmation that the "caution or note" is understood before continuing with the procedure.

Proposed Answer:

A. The CRS reads that the step is a "continuous action step" and if at any time during the EOP in affect conditions require the "response not obtained" actions to be completed, then the crew returns to that step and completes the actions.

Explanation (Optional):

A. Correct- Per station EOP rules of usage the * denote a continuous action step, and that step is only continuous for the time while in that procedure.

B. Incorrect- Per station EOP rules of usage the * denote a continuous action step, and that step is only continuous for the time while in that procedure.

C. Incorrect-Per station EOP rules of usage the * denote a continuous action step

D. Incorrect- Per station EOP rules of usage the * denote a continuous action step

Technical Reference(s): WOG EOP Guidance

Proposed references to be provided to applicants during examination: None

Learning Objective: LIC-EOP-31 Obj 5

Question Source:	Bank #	
	Modified Bank #	(Note changes or attach parent)
	New	X
Question History:	Last NRC Exam	N/A

Question Cognitive Level: Memory or Fundamental Knowledge __X__
Comprehension or Analysis ____

10 CFR Part 55 Content: 55.41 __X__
55.43 ____

Comments:

2.4.13 **Knowledge of crew roles and responsibilities during EOP flowchart use.** (CFR: 41.10 / 45.12)

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	3	
	Group #		
	K/A #	2.4.11	
	Importance Rating	3.6	

Proposed Question:

Indian Point 3 is conducting a plant start up after a short outage. Reactor Power is 30%. An automatic turbine trip occurs, and the crew enters ONOP-TG-4, "Turbine Trip Below P-8". Which of the following is an initial operator action for this condition?

A. Place Steam Dumps in Manual control.

B. Place Feed Water Regulating Valves in Manual control.

C. Place the Rod Control System in Manual control.

D. Place Main Boiler Feed Pump Speed Control in Manual control.

Proposed Answer:

C. Place the Rod Control System in Manual control.

Explanation (Optional):

A. Incorrect- Prefer Steam Dumps in Auto to respond to the transient

B. Incorrect- Prefer Feedwater Regulating Valves in Auto to respond to the transient

C. Correct- Prevent rods from driving in and allows plant to stabilize. Large Tave/Tref error develops due to the turbine trip.

D. Incorrect- Prefer Main Boiler Feed Pump Speed Control in Auto to respond to the transient

Technical Reference(s): ONOP-TG-4, "Turbine Trip Below P-8"

Proposed references to be provided to applicants during examination: None

Learning Objective: LIC-ONP-52 Obj 3

Question Source: Bank # ______

Modified Bank # ______(Note changes or attach parent)

New X

Question History: Last NRC Exam N/A

Question Cognitive Level: Memory or Fundamental Knowledge ______

Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 X

55.43 ______

Comments:

2.4.11 **Knowledge of abnormal condition procedures.** (CFR: 41.10 / 43.5 / 45.13)

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	3	
	Group #		
	K/A #	2.4.16	
	Importance Rating	4.0	

Proposed Question:

A Reactor Trip has occurred due to a loss of Instrument Air. The crew is taking actions per ES-0.1," Reactor Trip Response". The RO has recommended to enter ONOP- IA- 1, "Loss of Instrument Air". Which of the following statements is correct regarding this recommendation?

A. While in the EOP Network, use of lower tier procedures is prohibited, therefore ONOP- IA- 1, "Loss of Instrument Air" can not be implemented.

B. ONOP- IA- 1, "Loss of Instrument Air" can be completed concurrently with the EOP Network with the agreement of the CRS.

C. ONOP-IA-1, "Loss of Instrument Air" takes immediate priority over ES-0.1 " Reactor Trip Response" actions since Instrument Air is assumed to be available in the EOP network.

D. There is no need to implement ONOP-IA-1, "Loss of Instrument Air", as there are direct actions in ES-0.1 " Reactor Trip Response" to restore Instrument Air.

Proposed Answer:

B. ONOP- IA- 1, "Loss of Instrument Air" can be completed concurrently with the EOP Network with the agreement of the CRS.

Explanation (Optional):

A. Incorrect- Concurrent actions are allowed and in some cases necessary in the EOPs

B. Correct- Per station EOP usage guidelines

C. Incorrect- Can be worked in parallel, but do not take priority over EOPs

D. Incorrect- EOP ES-0.1 does not restore instrument air.

Technical Reference(s): WOG EOPUsage Document

Proposed references to be provided to applicants during examination: None

Learning Objective:	LIC-EOP-31 Obj 19		
Question Source:	Bank #		
	Modified Bank #		(Note changes or attach parent)
	New	X	
Question History:	Last NRC Exam	N/A	
Question Cognitive Level:	Memory or Fundamental Knowledge	X	
	Comprehension or Analysis		
10 CFR Part 55 Content:	55.41	X	
	55.43		

Comments:

2.4.16 **Knowledge of EOP implementation hierarchy and coordination with other support procedures.**

(CFR: 41.10 / 43.5 / 45.13)